

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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ALLIANCE LAUNDRY SYSTEMS, LLC,  
Petitioner,

v.

PAYRANGE LLC,  
Patent Owner.

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IPR2025-00573  
U.S. Patent No. 11,481,772

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**DECLARATION OF DR. B. CLIFFORD NEUMAN  
UNDER 37 C.F.R. § 1.68 IN SUPPORT OF PETITION FOR  
*INTER PARTES* REVIEW**

Mail Stop Patent Board  
Patent Trial and Appeal Board  
P.O. Box 1450  
Alexandria, VA 22313-1450

Petitioner Exhibit 1003-0001

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**TABLE OF EXHIBITS<sup>1</sup>**

<b>Exhibit No.<sup>2</sup></b>	<b>Description</b>	<b>Publication Date (unless otherwise noted)</b>	<b>Type of Prior Art</b>
1001	USPN 11,481,772 (the '772 Patent) (Patent submitted for <i>Inter Partes</i> Review)	December 18, 2013 (earliest possible priority date based on filing of provisional application)	N/A
1002	File History for USPN 11,481,772	N/A	N/A
1003	Declaration of Dr. B. Clifford Neuman Under 37 C.F.R. § 1.68 in Support of Petition for <i>Inter Partes</i> Review of the '772 Patent	N/A	N/A
1004	<i>Curriculum Vitae</i> of Dr. B. Clifford Neuman	N/A	N/A
1005	USPN 10,210,501 (“ <i>Low</i> ”)	July 25, 2013	§ 102(a), (d)
1006	USPN 9,898,884 (“ <i>Arora</i> ”)	April 4, 2013	§ 102(a), (d)

<sup>1</sup> For the Board’s convenience, this Table of Exhibits includes all references cited in this Declaration and in the corresponding Petition. Accordingly, the Table of Exhibits in the Declaration and the Petition are identical.

<sup>2</sup> For ease of review, I adopt the following citation convention for this Declaration. U.S. patent references are cited by the reference’s internal column:line, page:line, or ¶ number (not stamped pagination). Supporting papers (file history, definitions, C.V.) are cited by stamped pagination number.

<b>Exhibit No.<sup>2</sup></b>	<b>Description</b>	<b>Publication Date (unless otherwise noted)</b>	<b>Type of Prior Art</b>
1007	USPN 8,958,846 (“ <i>Freeny</i> ”)	Aug. 23, 2006	§ 102(a), (d)
1008	USPN 8,255,323 (“ <i>Casey</i> ”)	Aug. 28, 2012 (issuance date)	§ 102(a)(1)
1009	PayRange’s Statutory Disclaimer of USPN 11,481,772 claims 1-6, 8-10, and 12-20	Filed on November 22, 2023	N/A
1010	USPN 3,457,391 (“ <i>Yamamoto</i> ”)	July 22, 1969 (issuance date)	§ 102(a)(1)
1011	USPN 3,931,497 (“ <i>Gentile</i> ”)	Jan. 6, 1976 (issuance date)	§ 102(a)(1)
1012	USPN 6,810,234 (“ <i>Räsänen</i> ”)	Oct. 26, 2004 (issuance date)	§ 102(a)(1)
1013	US Patent Pub. No. 2003/0172028 (“ <i>Abell</i> ”)	Mar. 7, 2002	§ 102(a), (d)
1014	US Patent Pub. No. 2003/0130902 (“ <i>Athwal</i> ”)	Nov. 4, 2002	§ 102(a), (d)
1015	Transcript, <i>Chemours Co. FC, LLC v. Daikin Indus., Ltd.</i> , 1:17-cv-01612, Dkt. 77, PageID.1319-1351 (D. Del. Jan. 3, 2019).	N/A	N/A
1016	Excerpted Copy of U.S. District Courts—Combined Civil and Criminal Federal Court Management Statistics-Profiles for the Reporting Period ending June 30, 2024, available at <a href="https://www.uscourts.gov/data-news/reports/statistical-reports/federal-court-management-statistics/federal-court-management-statistics-june-2024">https://www.uscourts.gov/data-news/reports/statistical-reports/federal-court-management-statistics/federal-court-management-statistics-june-2024</a> .	N/A	N/A

Exhibit No. <sup>2</sup>	Description	Publication Date (unless otherwise noted)	Type of Prior Art
1017	PayRange Claim Chart for the USPN 11,481,772, attached as Exhibit L to PayRange's Amended Counterclaims in <i>Alliance Laundry Systems, LLC v. PayRange, Inc.</i> , 24-cv-733-MN, Dkt. 18, PageID.1404-1416 (D. Del., filed Oct. 4, 2024)	N/A	N/A
1018	US Patent Pub. No. 2018/0374076 ("Wheeler")	Dec. 27, 2018	N/A
1019	US Patent Pub. No. 2018/0197167 ("Ganesan")	July 12, 2018	N/A
1020	US Patent Pub. No. 2019/0236586 ("Mei")	Aug. 1, 2019	N/A
1021	US Patent Pub. No. 2016/0132870 ("Xu")	May 12, 2016	N/A
1022	USPN 309,219 ("Fruen")	Dec. 16, 1884 (issuance date)	N/A
1023	Exhibit A to PayRange's Amended Counterclaims in <i>Alliance Laundry Systems, LLC v. PayRange, Inc.</i> , 24-cv-733-MN, Dkt. 18, PageID.972-985 (D. Del., filed Oct. 4, 2024)	N/A	N/A

I, Dr. B. Clifford Neuman, hereby declare as follows:

## **I. INTRODUCTION**

1. I am making the present Declaration at the request of Alliance Laundry Systems LLC (“Petitioner”) in support of the Petition for *Inter Partes* Review (IPR) of Claims 7 and 11 (“the Challenged Claims”) of U.S. Patent No. 11,481,772 (“the ’772 Patent,” Ex. 1001).

2. I am being compensated for my work on this matter and for reasonable and customary expenses associated with my work and testimony in this proceeding. My compensation is not contingent on the outcome of this matter or the specifics of my testimony, and I have no other interest in this proceeding or the parties thereto.

3. I have been asked to provide my opinions regarding whether the Challenged Claims of the ’772 Patent are unpatentable insofar as they would have been obvious to a person having ordinary skill in the art (“POSA”) at the time of the alleged invention, in view of the prior art.

4. It is my opinion that all of the Challenged Claims would have been obvious to a POSA at the time of the alleged invention.

## **II. DOCUMENTS RELIED UPON**

5. In reaching my opinions in this case, I reviewed the currently filed Petition for *Inter Partes* Review of U.S. Patent No. 11,481,772 (“the IPR Petition”) and the various exhibits referenced therein, such as, for example, the ’772 Patent

itself and the prior art references cited in the IPR Petition. I agree with the contents of the IPR Petition for at least the reasons expressed in this Declaration, and I believe my opinions expressed below are consistent with the contents of the IPR Petition.

6. I also reviewed each of the documents listed in the Table of Exhibits at the beginning of this Declaration (which is identical to the Table of Exhibits in the IPR Petition).

7. In forming the opinions expressed below, I have also considered the relevant legal standards, including the standards for anticipation and obviousness, any additional authoritative documents as cited in the body of this Declaration, and my own knowledge and experience based upon my work in the field of electronic payments and distributed networks as described below.

8. Unless otherwise noted, all emphasis in any quoted material has been added.

### **III. QUALIFICATIONS AND PROFESSIONAL EXPERIENCE**

9. My complete qualifications and professional experience are described in my *Curriculum Vitae*, a copy of which can be found in Exhibit 1004. The following is a summary of my relevant qualifications and professional experience.

10. I received a Ph.D. in Computer Science in 1992 and an M.S. in Computer Science in 1988 from the University of Washington, and an S.B.

(Bachelor's) in Computer Science and Engineering in 1985 from the Massachusetts Institute of Technology.

11. Since receiving my doctorate, I have devoted my career to the field of distributed computer systems development and research with a significant portion of my experience in the area of electronic commerce and internet payments. I have studied, taught, practiced, and researched in the field of computer science for over forty years.

12. I am currently an Associate Professor of Computer Science Practice in the Department of Computer Science at the University of Southern California (USC), where I have taught since 1992. I am also the Director of the Center for Computer Systems Security, an affiliated Scientist at USC's Information Sciences Institute, and I direct the Computer Security Curricula within the Data Science Program at USC.

13. I teach and have taught numerous courses at USC, including advanced courses in computer science for upper-level undergraduates and graduate students, on topics such as distributed systems and computer and network security.

14. As part of my research at USC, I have worked in a number of areas, including research in distributed computer systems with emphasis on scalability and computer security, especially in the areas of authentication, authorization, policy, electronic commerce, and protection of cyber-physical systems and critical

infrastructure such as the power grid. I have worked on the design and development of scalable information, security, and computing infrastructure for the Internet. I am also the principal designer of the Kerberos system, an encryption-based authentication system used among other things as the primary authentication method for most versions of Microsoft's Windows, as well as many other systems. I developed systems which used Kerberos as a base for more comprehensive computer security services supporting authorization, accounting, and audit.

15. In addition to my academic experience, I have many years of practical experience designing computer security systems. For example, from 1985-1986, I worked on Project Athena at MIT, to produce a campus-wide distributed computing environment. I also served as Chief Scientist at CyberSafe Corporation from 1992-2001. I have designed systems for network payment which build upon security infrastructure to provide a secure means to pay for services provided over the Internet. For example, I designed the NetCheque and NetCash systems, which are suitable for micropayments (payments on the order of pennies where the cost of clearing a credit card payment would be prohibitive). In 2000 and 2001, I was on the advisory board for NetResearch Inc, d/b/a BayBuilder, which was a company developing online auction platforms.

16. As part of my research on computer security and electronic payment systems, I was involved with the integration of portable electronic devices such as

smart cards and PCMCIA cryptographic processors with other computer devices such as card readers and personal computers.

17. I have authored or co-authored over 50 academic publications in the fields of computer science and engineering. In addition, I have been a referee or editor for the following academic journals: ACM Transactions on Information and Systems Security and the International Journal of Electronic Commerce. My *Curriculum Vitae* includes a list of publications on which I am a named author.

18. I am also a member of the Institute of Electrical and Electronics Engineers (IEEE), Association for Computer Machinery (ACM), and the Internet Society (ISOC), among others. I have also served as program and/or general chair of the following conferences: The Internet Society Symposium on Network and Distributed System Security and the ACM Conference on Computer and Communications Security.

19. In 2023, I submitted four declarations in support of four separate petitions filed by CSC Serviceworks, Inc. for *Inter Partes* Review of the following patents owned by PayRange, Inc.: (1) U.S. Pat. No. 10,891,608 (IPR2023-01188); (2) U.S. Pat. No. 10,438,208 (IPR2023-01187); (3) U.S. Pat. No. 8,856,045 (IPR2023-01186); and (4) U.S. Pat. No. 11,481,772 (IPR2023-01449). My opinions herein are independent of those expressed in my prior declarations, but none of my opinions herein are inconsistent with those prior opinions.

#### IV. LEVEL OF ORDINARY SKILL IN THE ART

20. I understand there are multiple factors relevant to determining the level of ordinary skill in the pertinent art, including (1) the levels of education and experience of persons working in the field at the time of the alleged invention; (2) the sophistication of the technology; (3) the types of problems encountered in the field; and (4) the prior art solutions to those problems.

21. It is my understanding that the earliest possible priority date for the '772 Patent is December 18, 2013.

22. A person of ordinary skill in the art (“POSA”) in the field of the '772 Patent, as of December 18, 2013, would have had a bachelor’s degree in electrical engineering, computer engineering, computer science, or equivalent training, and approximately three years of experience with electronic payment systems, vending machine technologies, or distributed network systems. Lack of work experience can be remedied by additional education, and vice versa.<sup>3</sup>

23. I understand that, in the Post-Grant Review of related Patent No. 10,891,614 (“the '614 Patent”), *KioSoft Technologies, LLC v. PayRange, Inc.*,

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<sup>3</sup> See *CSC ServiceWorks, Inc. v. PayRange Inc.*, No. IPR2023-01449, Institution Decision (Paper 14) at \*13 (PTAB April 12, 2024) (Board adopting the same level of skill in the art for related patent to the '772 Patent).

PGR2021-00093 (“the ’614 PGR”), the Board adopted the Petitioner’s definition of a POSA, which was:

A [POSA] at the time of the earliest claimed filing date of the ’614 Patent would have had an education background of, or practical experience providing an equivalent to, a Bachelor of Science in Electrical Engineering, Computer Science, Information Technology, or a related/equivalent field and at least 3 years of academic or industry experience in electronic payment systems.

PGR2021-00093, Paper 38 at 8-9.

24. The definition of a POSA that was adopted by the Board in the ’614 PGR is consistent with the definition of a POSA that I have offered here. Specifically, both definitions include an education background in electrical engineering, computer science, or a similar field, such as information technology or computer engineering. Further, both definitions include approximately three years of experience in a related field, such as electronic payment systems.

25. Based upon my education and experience as set forth above, I believe that I would qualify as at least a POSA in the relevant time frame. At the time of the alleged invention, I had a sufficient level of knowledge, experience, and education to provide an expert opinion in the field of the ’772 Patent.

26. For purposes of this Declaration, in general, and unless otherwise noted, my statements and opinions, such as those regarding my experience and the

understanding of a POSA generally (and specifically related to the references I consulted herein), reflect the knowledge that existed in the field as of the alleged priority date of the '772 Patent (i.e., December 18, 2013). Unless otherwise stated, when I provide my understanding and analysis below, it is consistent with the level of a POSA as of the alleged priority date of the '772 Patent.

## **V. RELEVANT LEGAL STANDARDS**

27. I am not an attorney. In preparing and expressing my opinions and considering the subject matter of the '772 Patent, I am relying on certain basic legal principles that counsel have explained to me. These principles are discussed below.

28. I understand that prior art to the '772 Patent includes patents and printed publications in the relevant art that predate the priority date of the alleged invention recited in the '772 Patent.

29. I have been informed and understand that a patent claim may be invalid as “anticipated” under 35 U.S.C. § 102 if each element of that claim is disclosed either explicitly or inherently in a single prior art reference. I understand that a disclosure is “inherent” if the missing element is necessarily present in view of the explicit disclosure. The fact that the reference might possibly practice or contain a claimed limitation is insufficient to establish that the reference inherently teaches the limitation. For anticipation by a prior art publication or document, I further

understand that the reference's description must enable a POSA to practice the claimed invention without undue experimentation.

30. I have been informed that a claimed invention is unpatentable under 35 U.S.C. § 103 if the differences between the invention and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. I have also been informed by counsel that the obviousness analysis takes into account factual inquiries including the level of ordinary skill in the art, the scope and content of the prior art, and the differences between the prior art and the claimed subject matter.

31. I have been informed by counsel that the Supreme Court has recognized several rationales for combining references or modifying a reference to show obviousness of claimed subject matter. Some of these rationales include the following: (a) combining prior art elements according to known methods to yield predictable results; (b) simple substitution of one known element for another to obtain predictable results; (c) use of a known technique to improve a similar device (method, or product) in the same way; (d) applying a known technique to a known device (method, or product) ready for improvement to yield predictable results; (e) choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success; and (f) some teaching, suggestion, or motivation in the prior

art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

## **VI. BACKGROUND OF THE '772 PATENT AND THE PRIOR ART**

### **A. The State of the Art Prior to December 2013**

32. “Vending machines (or ‘automatic retailing’ machines) . . . have been around for thousands of years.” Ex. 1001, 1:45–46. In fact, the “first simple mechanical coin operated vending machines were introduced in the 1880s.” *Id.*, 1:46–48. For example, a patent from 1884 entitled “Automatic Liquid-Drawing Device” (“*Fruen*”), discloses a coin-operated machine that dispenses liquid. *See generally* Ex. 1022.

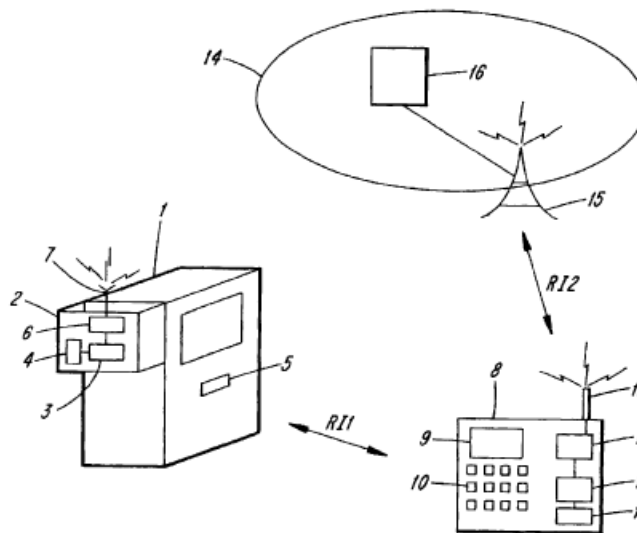
33. Since at least as early as the 1960’s, alternative payment methods for a vending machine transaction—such as credit card—were in use. For instance, a 1969 patent, entitled “Vending Apparatus for use with Credit Cards” (“*Yamamoto et al.*”), discloses a vending machine that accepts payment by credit card for various articles. *See generally* Ex. 1010.

34. Vending machine payment over communication lines also existed before the invention of the internet. For instance, a 1976 patent entitled “Automated Fuel Dispenser” (“*Gentile et al.*”) discloses an automated fuel dispensing system that authorizes credit and billing via direct connection to a credit center over communication lines. *See generally* Ex. 1011.

35. Using a personal mobile device, such as a mobile phone, to conduct a vending machine transaction was also well-known more than a decade before the earliest possible priority date for the '772 Patent. For example, a patent that was filed in 1999 entitled “Mobile Telephone Network Access” (“*Räsänen et al.*”) discloses a method of conveying information from a vending machine to a mobile phone to conduct a transaction. *See generally* Ex. 1012.

36. *Räsänen* teaches that “a mobile telephone 8 which may be thought of as a ‘smart phone’” comprises “a display 9 and a keyboard 10, as well as a central processing unit (or digital signal processor) 11.” *Id.*, 3:50-55. The phone communicates with the control unit 2 of a vending machine 1 using local radio air interface protocol (RI1) and with the cellular telephone network 14 using an antenna 12 and transceiver 13 to conduct a transaction. *See id.*, 3:43-49, 3:55-65. *See also id.*, Fig. 1, reproduced below:

Fig. 1



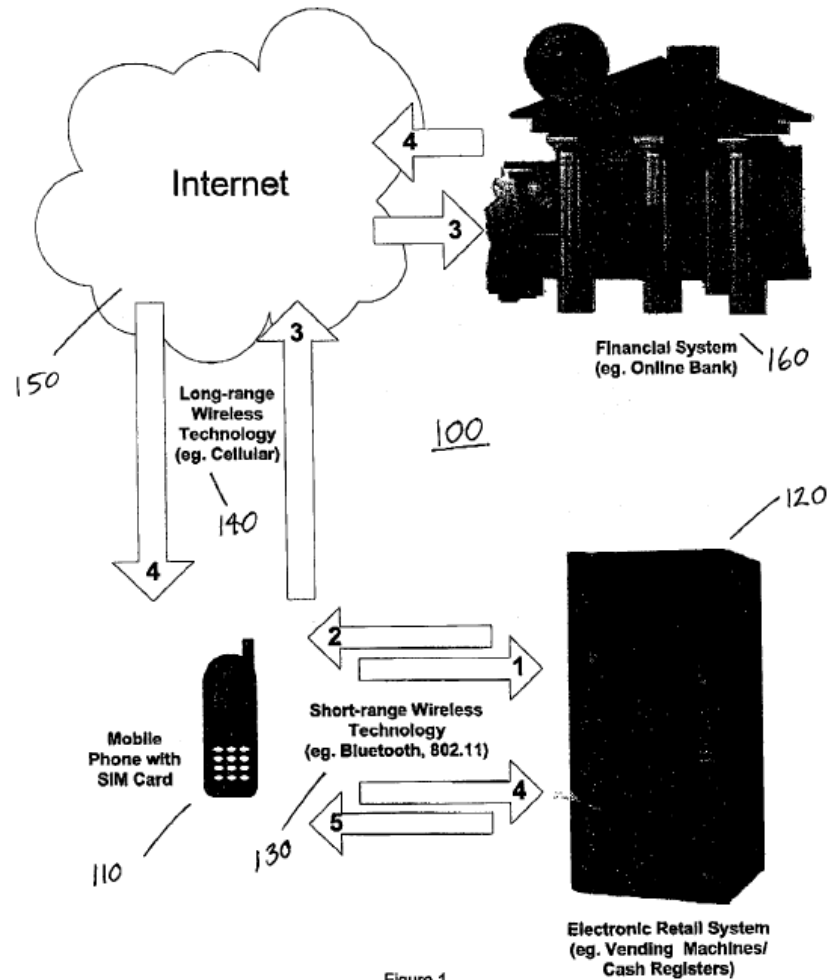
Ex. 1012, Figure 1 (annotated).

37. Using a personal mobile device to identify available vending machines based on proximity was also well-known more than a decade before the earliest possible priority date for the '772 Patent. For instance, *Räsänen* teaches that communications over the local radio air interface protocol (RI1) are carried out over a small range, “e.g. of the order of 10 metres.” *Id.*, 3:46-49. The disclosed vending machine is arranged to broadcast a terminal alert over its approximately 10-meter broadcast range. *See id.*, 3:66-4:1. Mobile phones within that range can then receive an alert that the mobile phone user is within range of the vending machine. *See id.*, 4:1-10.

38. Identifying available vending machines based on proximity to a mobile phone continued to evolve years before the earliest possible priority date for the '772

Patent. For instance, a U.S. patent publication published in 2003 entitled “Authorization of Payment for a Commercial Transaction Via a Bluetooth Enabled Device” discloses detecting an available vending machine using a cellular phone’s Bluetooth capabilities. *See* Ex. 1013 (“*Abell et al.*”).

39. The concept of enabling mobile payment to an offline vending machine was also introduced long before the earliest possible priority date for the ’772 Patent. For example, U.S. Publication No. 2003/0130902 (“*Athwal et al.*”), entitled “Short Range Wireless System,” published on July 10, 2003, describes a method for transacting a payment that does not require the vending machine (referred to as an “electronic retail system”) to be connected to a wireless network. Ex. 1014, ¶ 19. Like the ’772 Patent, *Athwal* uses short-range communication between a vending machine (or other electronic retail system) and a mobile device to transact payment. *See id.*, ¶ 22; *see also* Fig. 1:



40. Using a mobile phone to provide the user-interface for conducting a vending machine transaction was also well-known more than a decade before the earliest possible priority date for the '772 Patent. *Räsänen* teaches downloading a set of interface software instructions to the mobile phone which configures the user interface of the mobile phone according to the vending machine's requirements. *See* Ex. 1012, 4:40-47. *Räsänen* further teaches that these downloadable instructions may provide the user with a list of available goods, the prices of the goods, and an

affordance that, when pressed, indicates conclusion of the transaction. *See id.*, 4:47-58 (“The user may then conclude the transaction by again pressing the accept key.”).

**B. Overview of the Alleged Invention of the ’772 Patent**

41. The ’772 Patent is entitled “Method and System for Presenting Representations of Payment Accepting Unit Events.” The specification explains that vending, or automatic retailing machines, “have been around for thousands of years.” Ex. 1001, 1:45–46. It further explains that vending machines are “one type of ‘payment accepting unit,’” which is described as “equipment that requires payment for the dispensing of products and/or services.” *Id.*, 1:54–58. It also explains that, historically, these vending machines or “payment accepting units” required “insertion of coins, bills, or cards,” but “[a]s the number of people with Internet-connected mobile devices proliferates...[m]obile payment is a logical extension.” *Id.*, 1:66–2:12.

42. The ’772 Patent discloses using a mobile device to “present[] representations of payment accepting unit events on a display.” *Id.*, Abstract. Figure 27A is a flowchart diagram for presenting representations of payment accepting unit events. *Id.*, 37:27-30. Figures 27A and 27B are shown below:

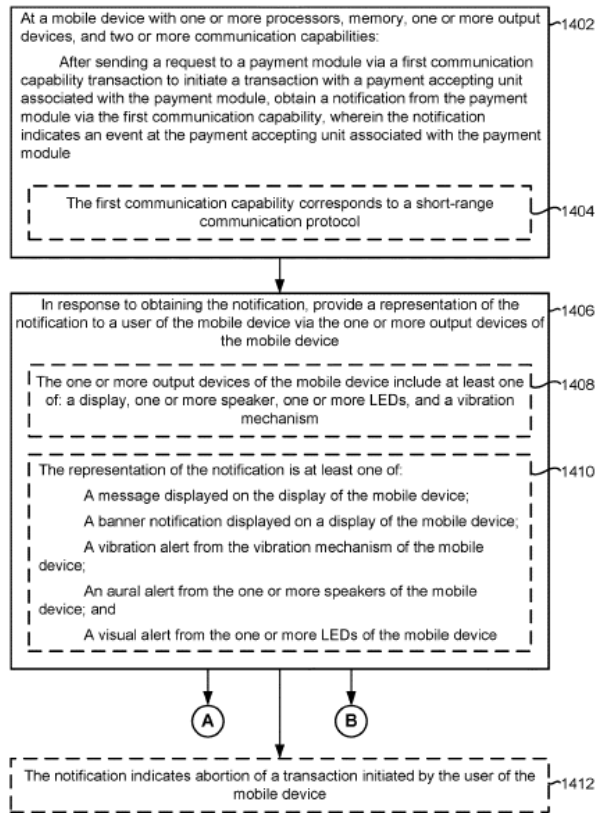


Figure 27A

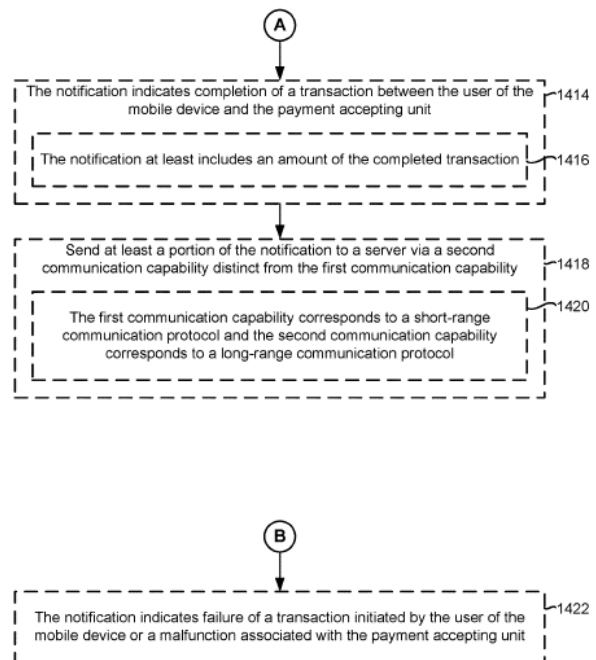


Figure 27B

Ex. 1001, Figures 27A, 27B.

43. The '772 Patent specification explains that “in some implementations, the method 1400 is performed by the mobile device 150...or a component thereof (e.g., the application 140).” *Id.*, 37:30-35. The mobile device sends a request to a payment module to initiate a transaction with a payment accepting unit (e.g., a vending machine). *Id.*, 37:42-53. “After sending [the] request...the mobile device obtains (1402) a notification from the payment module via the first communication capability, where the notification indicates an event at the payment accepting unit associated with the payment module.” *Id.* Then, “the mobile device provides (1406)

a representation of the notification to a user of the mobile device via the one or more output devices of the mobile device.” *Id.*, 38:4–7.

44. The ’772 Patent issued with twenty claims, but Patent Owner previously disclaimed all but Claims 7 and 11, both of which depend from cancelled Claim 1. Ex. 1009.

### **C. Summary of the Prosecution History**

45. The earliest patent application to which the ’772 Patent claims priority is U.S. Provisional Application No. 61/917,936, filed December 18, 2013 (“the ’936 Provisional”). Ex. 1001, p. 2.

46. The prior art relied upon herein pre-dates the earliest alleged priority date of the ’772 Patent.

47. The application that issued as the ’772 Patent (Application No. 17/654,732, the “’732 Application”) was filed on March 14, 2022. Ex. 1001, p. 1.

48. The only Office Action on the merits for the ’772 Patent application rejected all pending claims under the obviousness-type double patenting over claims of USPN 9,659,296 (“the ’296 Patent”), the ’614 Patent, and provisionally over Application No. 17/147,305 (“the ’305 Application”). Ex. 1002, pp. 148–49. The Examiner remarked that “[t]he only difference between the instant application and the ’614 Patent is merely a labeling difference.... [A]ll the features of claims 1-20 are contained in claims 1-25 of the ’614 Patent.” *Id.*, p. 149. The same remark was

made for the '296 Patent, and the '305 Application. *Id.*, pp. 148–49. The Applicant filed a terminal disclaimer in response. *Id.*, pp. 164–65.

## **VII. SUMMARY OF THE ASSERTED PRIOR ART**

### **A. *Low*: U.S. Patent No. 10,210,501 (Ex. 1005)**

49. U.S. Patent No. 10,210,501 to Low et al (“*Low*”) is titled “Electronic Payments to Non-Internet Connected Devices Systems and Methods.” *Low* issued on February 19, 2019 from an application filed on July 25, 2013 and I understand, based on discussions with counsel, that it is therefore prior art to the '772 Patent under 35 U.S.C. §§ 102(a) and/or 102(d).

50. *Low* teaches using a consumer’s wireless device to conduct transactions with unmanned devices such as vending-machines. Ex. 1005, 1:16-20. The wireless device communicates with unmanned devices, which transmit a machine identifier to said device. *Id.*, 2:11-28. “[I]n some embodiments, multiple machines may send their unique identifiers, such that the user is able to select one or more machines to purchase from.” *Id.*, 2:11-28. The user then selects their desired items, makes a purchase, and the vending machine dispenses said item. *Id.*, 5:19-30.

### **B. *Arora*: U.S. Patent No. 9,898,884 (Ex. 1006)**

51. U.S. Patent No. 9,898,884 to Arora et al (“*Arora*”) is titled “Method and System of Personal Vending.” *Arora* issued on February 20, 2018 from an application filed on April 4, 2013 and I understand, based on discussions with

counsel, that it is therefore prior art to the '772 Patent under 35 U.S.C. §§ 102(a) and/or 102(d).

52. *Arora* teaches using a “personal electronic device” to utilize “a group of vending machines managed by a vending machine company[.]” Ex. 1006, Abstract. *Arora* displays to the consumer “either products or vending machines from a list of options provided via the user interface of the personal electronic device, wherein the list of options depends on the actual available inventory[.]” *Id.*, Abstract. The systems and methods of *Arora* disclose tracking a consumer’s purchase history and offering coupons to a consumer based upon the same. *Id.*, 13:47–14:16; *id.*, Fig. 3.

**C. *Freeny*: U.S. Patent No. 8,958,846 (Ex. 1007)**

53. U.S. Patent No. 8,958,846 to Freeny, Jr. (“*Freeny*”) is titled “Communication and Proximity Authorization Systems.” *Freeny* issued on February 17, 2015 from an application filed August 23, 2006 and I understand, based on discussions with counsel, that it is therefore prior art to the '772 Patent under 35 U.S.C. §§ 102(a) and/or 102(d).

54. *Freeny* discloses methods of transacting with a proximity service unit via a consumer’s wireless device. Ex. 1007, Abstract. Moreover, *Freeny* discloses a proximity authorization unit (which is a form of wireless device) that “can operate just like a smart card with the approved credit amount stored in the proximity

authorization unit 2910 until transactions are authorized[.]” *Id.*, 37:60-63. The customer’s approved credit balance “can be checked at any time by the user of the proximity authorization unit[.]” *Id.*, 38:3-5.

**D. Casey: U.S. Patent No. 8,255,323 (Ex. 1008)**

55. U.S. Patent No. to Casey et al (“*Casey*”) is titled “Motion Based Payment Confirmation.” *Casey* issued on August 28, 2012 and I understand, based on discussions with counsel, that it is therefore prior art to the ’772 Patent under 35 U.S.C. § 102(a)(1).

56. *Casey* describes techniques for confirming a payment transaction on an electronic device that includes a touchscreen. Ex. 1008, Abstract. *Casey* discloses methods of using a touchscreen to select payment methods or confirm payment. *Id.*, Fig. 5. In particular, a consumer may swipe their finger across a touchscreen to confirm payment. *Id.*, 16:36-47, Fig. 5.

**VIII. CLAIM CONSTRUCTION: 37 C.F.R. § 42.104(B)(3)**

57. It is my understanding that in order to properly evaluate the ’772 Patent, the terms of the claims must first be interpreted. It is my understanding that for the purposes of this post-grant review, the claims are to be construed under the so-called *Phillips* standard, under which claim terms are given their ordinary and customary meaning as would be understood by one of ordinary skill in the art in view of the

specification and prosecution history, unless the inventor has set forth a special meaning for a term.

58. For purposes of my analysis below, I do not believe any claim terms require explicit construction.

## IX. CONCLUSIONS REGARDING PATENTABILITY

59. It is my opinion that the Challenged Claims of the '772 Patent are not patentable for at least the reasons proposed in Grounds 1 and 2 of the IPR Petition:

Ground	Claim(s)	35 U.S.C. §	Basis
1	7	103	<i>Low</i> in view of <i>Arora</i>
2	11	103	<i>Low</i> in view of <i>Arora</i> in further view of <i>Freeny</i> and <i>Casey</i>

60. Ground 1 shows how a POSA would have modified *Low* to include a user device having an accelerometer to detect when a user has departed a zone and then to cancel the transaction, as taught by *Arora*.

61. Ground 2 shows how a POSA would have modified the user interface of *Low's* user device to include a visual representation of an available payment accepting unit, as taught by *Arora*, a visual representation of an indication of a prepared balance, as taught by *Freeny*, and an affordance that when slid, indicates the initiation of the transaction, wherein the affordance is slid in response to receiving a user input of swipe on the affordance displayed on the display of the mobile device, as taught by *Casey*.

**A. Ground 1: Claim 7 is Rendered Obvious Under 35 U.S.C. § 103 Over *Low* in View of *Arora***

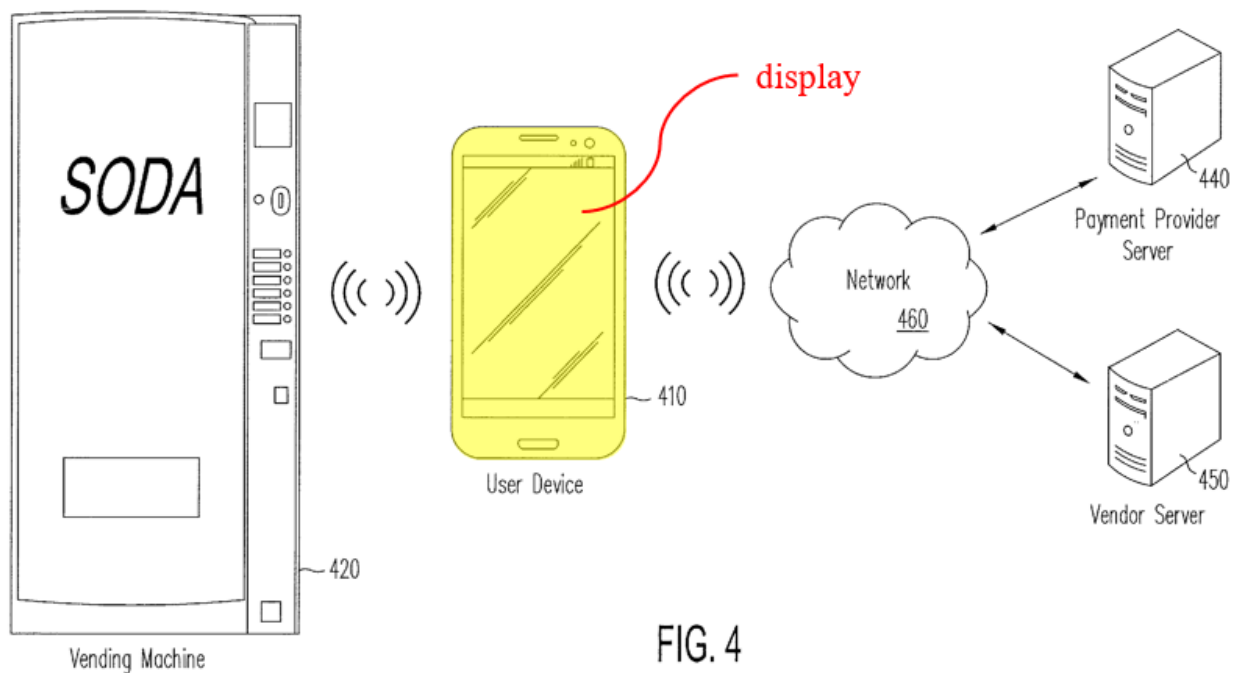
**1. *Low* Discloses All Elements of Claim 1, From Which Claim 7 Depends**

**a. [1.P] A method of presenting representations of payment accepting unit events**

62. *Low* discloses “systems and method[s] for an electronic payment to a non-Internet connected device.” Ex. 1005, Abstract. More specifically, *Low* teaches “a consumer device, such as a smart phone or computing tablet, communicates with a non-Internet connected unmanned device/machine via wireless communication, such as Bluetooth or NFC (Near Field Communication) means, for making a payment to the device utilizing a payment provider.” *Id.*, 2:11–16. *Low* teaches that the user device 110 may include a purchase application 112 stored thereon, which provides “a convenient interface to permit user 102 to select, purchase, and dispense products for sale at a vending machine 120.” *Id.*, 3:49–60. *Low* further teaches a method whereby a user may interact with the purchase application 112 via a display of a user device 110 to “add desired item(s) from one or more machines to a cart and make the purchase through a payment provider.” *Id.*, 2:29–34. Thus, to the extent the preamble is found to be limiting, it is my opinion that *Low* teaches a method of presenting representations (e.g., through the display of user device 110) of payment accepting unit events (e.g., indicia of various aspects of a transaction such as identification of a product, a purchase price, etc.).

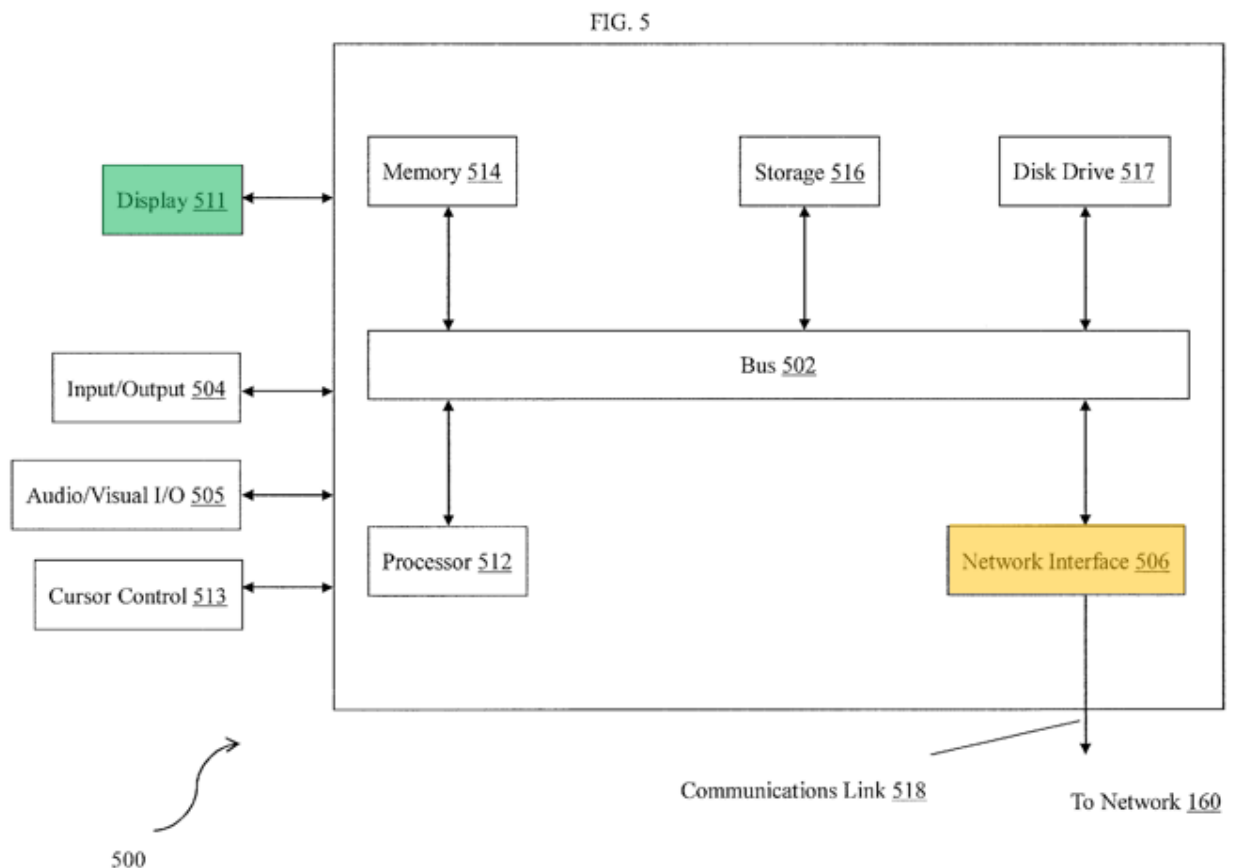
**b. [1.1] at a mobile device with one or more processors, memory, one or more output devices including a display, and one or more radio transceivers:**

63. *Low* teaches “a user device 110” that includes “one or more processors, memories, and other appropriate components for executing instructions such as program code and/or data stored on one or more computer readable mediums to implement the various applications, data, and steps described herein.” Ex. 1005, 3:26–32. The “user device 110 may be implemented as a personal computer (PC), a smart phone, personal digital assistant (PDA), laptop computer, and/or other types of computing devices.” *Id.*, 3:40–44. *Low* similarly describes a “user device 410,” highlighted in yellow in Figure 4 (reproduced below). *Id.*, 11:11–13. The user device 410 includes a display as shown in Figure 4.



Ex. 1005, Figure 4 (annotated).

64. *Low* teaches that user device 110/410 can be “implemented as computer system 500,” which includes a “display 511” (shown in green below) and a “transceiver or network interface 506” (shown in orange below) that “transmits and receives signals between computer system 500 and other devices, such as another user device, a merchant server, or a payment provider server via network 560.” *Id.*, 12:52–56.



Ex. 1005, Figure 5 (annotated).

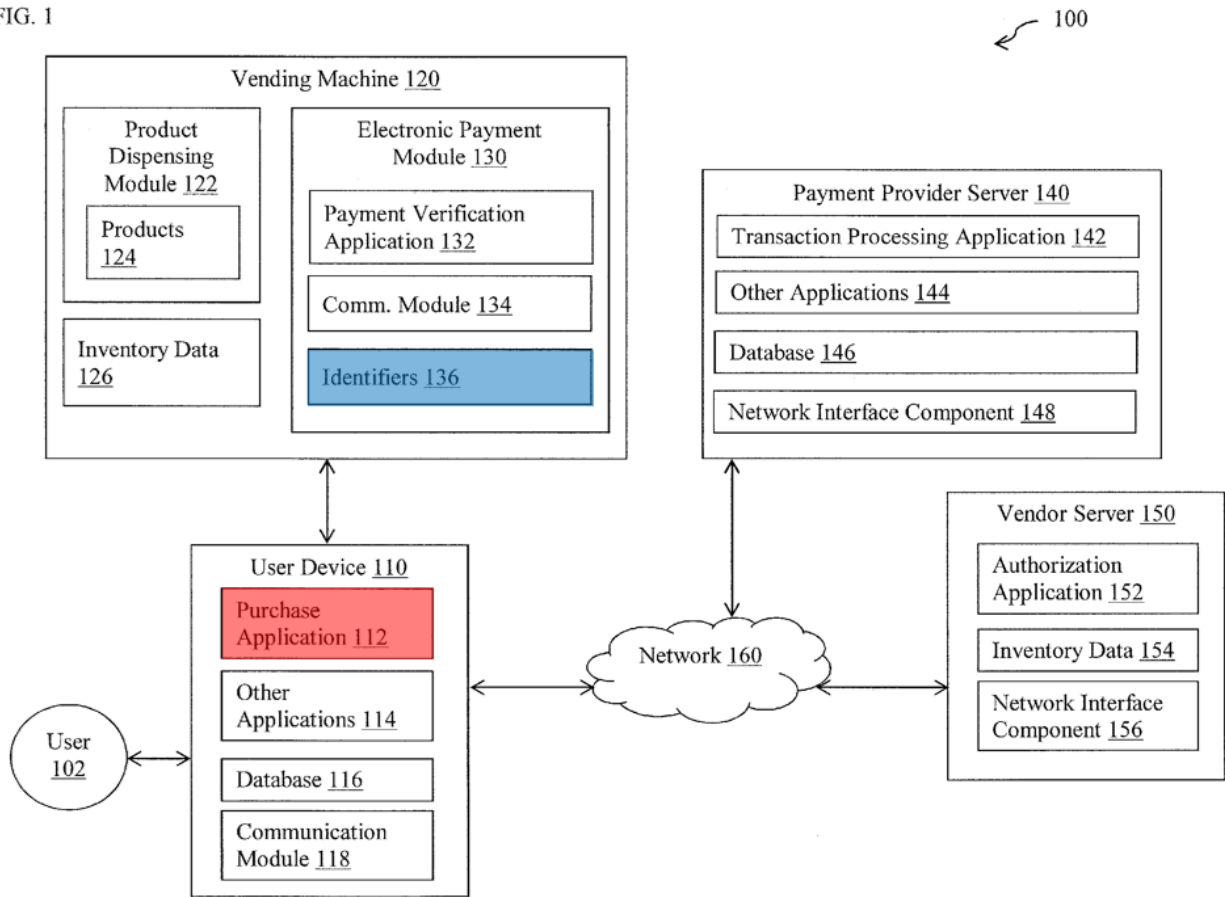
65. Thus, it is my opinion that *Low* teaches at a mobile device (user device 110/410) with one or more processors (e.g., processor 512), memory (e.g., memory

514), one or more output devices including a display (e.g., display 511), and one or more radio transceivers (e.g., transceiver or network interface 506).

**c. [1.2] identifying one or more payment accepting units in proximity to the mobile device that are available to accept payment from a mobile payment application executing on the mobile device**

66. *Low* teaches that user device 110 includes a “purchase application 112” which is used “to provide a convenient interface to permit user 102 to select, purchase, and dispense products for sale at a vending machine 120.” Ex. 1005, 3:57–60. The “[u]ser device 110 may further include one or more identifiers 136 which may be implemented, for example, as...data associated with hardware of vending machine 120...or other appropriate data used for authentication/identification of vending machine 120.” *Id.*, 6:16–21. *Low* further teaches that “the user may utilize a user device to access payment provider server 140 and receive locations of available [non-Internet connected machines] NICMs,” and can further receive “information corresponding to a plurality of NICM near user device 110,” such as “directions, map coordinates, and/or a GPS location of desired NICM.” *Id.*, 9:4–23. According to one embodiment of *Low*, “multiple machines may send their unique identifiers, such that the user is able to select one or more machines to purchase from.” *Id.*, 2:26–28. The purchase application 112 is shown in blue and the identifiers 136 are shown in red in the annotated version of Figure 1 of *Low* below.

FIG. 1



Ex. 1005, Figure 1 (annotated).

67. Thus, it is my opinion that *Low* teaches identifying (e.g., via identifiers 136) one or more payment accepting units (e.g., NICMs, such as vending machine 120) in proximity to the mobile device (e.g., “near user device 110”) that are available to accept payment from a mobile payment application (e.g., purchase application 112) executing on the mobile device (e.g., user device 110).

**d. [1.3] the identifying based at least in part on an identifier corresponding to the one or more payment accepting units**

68. As set forth above, *Low* teaches that “[u]ser device 110 may further include one or more identifiers 136 which may be implemented, for example, as...data associated with hardware of vending machine 120...or other appropriate data used for authentication/identification of vending machine 120.” Ex. 1005, 6:16–21. “The non-Internet connected machine (NICM) transmits a machine identifier to the user device, which allows the user device to retrieve a menu of items at the specific machine from the payment provider or an operator of the machine.” *Id.*, 2:16–20. *Low* further teaches that “the user may utilize a user device to access payment provider server 140 and receive locations of available NICMs,” and “can further receive directions, map coordinates, and/or a GPS location of desired NICM.” *Id.*, 9:16–23.

69. Thus, it is my opinion that *Low* teaches the identifying based at least in part on an identifier (e.g., machine identifier, such as the identifiers 136) corresponding to the one or more payment accepting units (i.e., NICMs, such as vending machine 120).

e. **[1.4] wherein the one or more payment accepting units are payment operated machines that accept payment for dispensing of products and/or services**

70. *Low* teaches that “vending machine 120 may be a vending machine, kiosk, terminal, or other device for dispensing items that are purchased.” Ex. 1005, 4:57–59.

71. Thus, it is my opinion that *Low* teaches wherein the one or more payment accepting units (i.e., vending machine 120) are payment operated machines that accept payment for dispensing of products and/or services (e.g., “dispensing items that are purchased”).

f. **[1.5] displaying a user interface of the mobile payment application on the display of the mobile device**

72. *Low* teaches “[p]urchase application 112 may be used, for example, to provide a convenient interface to permit user 102 to select, purchase, and dispense products for sale at a vending machine 120.” Ex. 1005, 3:57–60. A “menu is...displayed on the user device, and the user selects desired item(s) for purchase.” *Id.*, 2:24–25.

73. Thus, it is my opinion that *Low* teaches displaying a user interface (e.g., “interface”) of the mobile payment application (e.g., purchase application 112) on the display (e.g., display 511) of the mobile device (e.g., user device 110).

**g. [1.6] the user interface being configured to display a visual indication of the one or more payment accepting units**

74. *Low* teaches that a “non-Internet connected machine (NICM) transmits a machine identifier to the user device, which allows the user device to retrieve a menu of items at the specific machine from the payment provider or an operator of the machine.” Ex. 1005, 2:16–20. *Low* further teaches that the user device 110 may “receive a machine identifier from identifiers 136.” *Id.*, 8:66–9:2. “[M]ultiple machines may send their unique identifiers, such that the user is able to select one or more machines to purchase from.” *Id.*, 2:26–28. In my opinion, the user device 110 is configured to display the available machines such that the user is able to interact with the display to select the one or more machines from which to make a purchase.

75. Thus, it is my opinion that *Low* teaches the user interface (e.g., “interface”) being configured to display (e.g., “such that the user is able to select one or more machines to purchase from”) a visual indication of the one or more payment accepting units (e.g., “machine identifier”).

**h. [1.7] the user interface being configured to...accept user input to (i) receive selection by a user of the mobile device of an available payment accepting unit of the one or more payment accepting units**

76. *Low* teaches that a “non-Internet connected machine (NICM) transmits a machine identifier to the user device.” Ex. 1005, 2:16–20. *Low* further teaches

that “multiple machines may send their unique identifiers, *such that the user is able to select one or more machines to purchase from.*” *Id.*, 2:26–28 (emphasis added).

In my opinion, the user device 110 is configured to display either (i) the available machines such that the user is able to interact with the display to select the one or more machines from which to make a purchase or (ii) products available at particular machines, whereby selecting the product(s) necessarily selects the available machine that offers the product(s).

77. Thus, it is my opinion that *Low* teaches the user interface (e.g., “interface”) being configured to...accept user input to receive selection by a user of the mobile device of an available payment accepting unit of the one or more payment accepting units (“multiple machines may send their unique identifiers, such that the user is able to select one or more machines to purchase from”).

- i. **[1.8] the user interface being configured to...accept user input to...(ii) trigger payment by the mobile payment application for a transaction initiated by the user of the mobile device with the available payment accepting unit of the one or more payment accepting units**

78. *Low* teaches that the “user device displays the purchase request and, if the information is correct, the user selects a payment button or option on the user device, which communicates the payment request to a payment provider.” Ex. 1005, 2:46–49. *Low* teaches that the purchase request is approved and the “user device may then communicate the purchase authorization to the machine, which may

decrypt the information and dispense the purchased items(s) associated with the transaction number.” *Id.*, 2:49–62.

79. Thus, it is my opinion that *Low* teaches the user interface (e.g., “interface”) being configured to accept user input to trigger payment by the mobile payment application (e.g., “user selects a payment button or option on the user device”) for a transaction initiated by the user of the mobile device with the available payment accepting unit of the one or more payment accepting units (e.g., user device “communicates the payment request to a payment provider” and, after processing, “communicate[s] the purchase authorization to the machine, which may decrypt the information and dispense the purchased items(s) associated with the transaction number”).

**j. [1.9] establishing via the one or more radio transceivers a wireless communication path including the mobile device and the available payment accepting unit of the one or more payment accepting units**

80. *Low* teaches that “a consumer device, such as a smart phone or computing tablet, communicates with a non-Internet connected unmanned device/machine via wireless communication, such as Bluetooth or NFC (Near Field Communication) means, for making a payment to the device utilizing a payment provider.” Ex. 1005, 2:11–16. *Low* further teaches that “a NICM and a user device are paired, e.g., through a NFC or Bluetooth communication.” *Id.*, 2:38–39. *Low*

teaches that the user device 110 may receive inventory data 154 from a vending machine 120 “using an Internet connection of user device 110 *after a short range communication link is established* between user device 110 and vending machine 120.” *Id.*, 8:24–28 (emphasis added). In my opinion, the inventory data 154 (e.g., what is available for purchase at the vending machine 120) would not be available on the user device 110 until “after a short range communication link is established between user device 110 and vending machine 120,” as the vending machine 120 is not connected to the Internet and cannot otherwise transmit data to the user device 110.

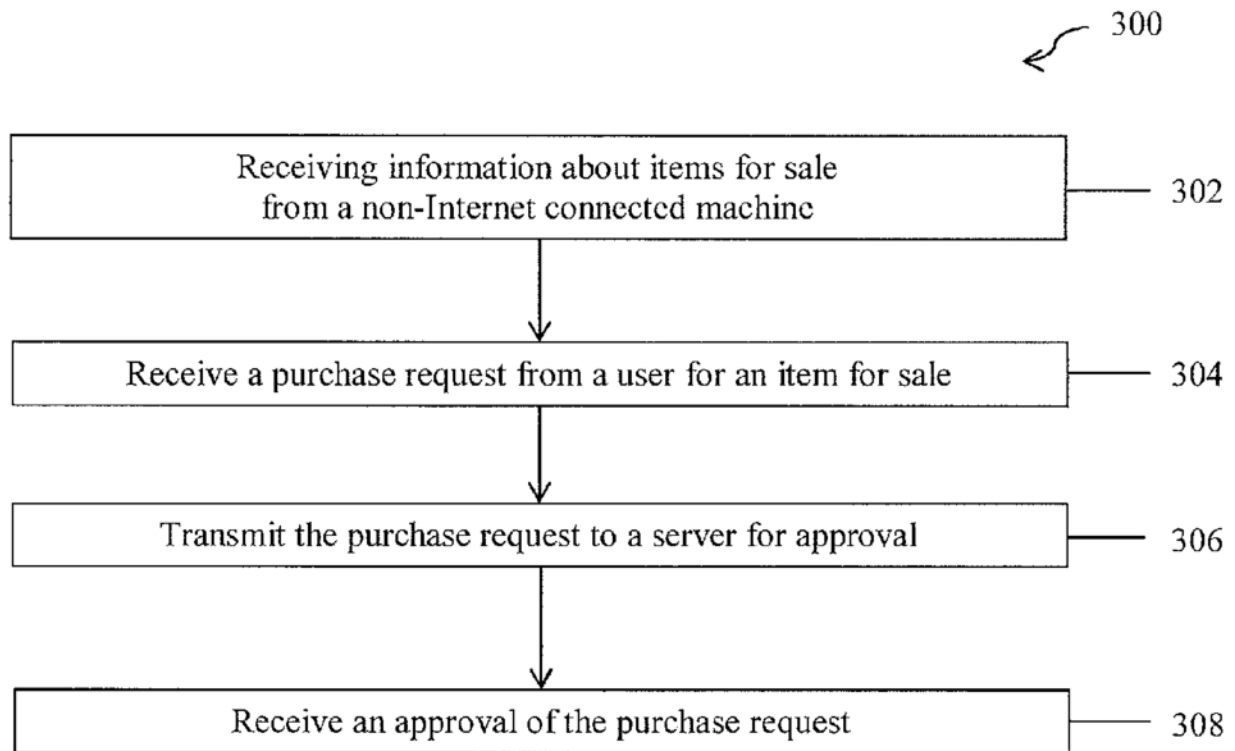
81. Thus, it is my opinion that *Low* teaches establishing via the one or more radio transceivers (e.g., “transceiver or network interface 506”) a wireless communication path (e.g., “communication link is established,” “device[s] are paired”) including the mobile device (e.g., user device 110) and the available payment accepting unit of the one or more payment accepting units (e.g., NICMs, such as vending machine 120).

**k. [1.10] after establishing the wireless communication path, enabling user interaction with the user interface of the mobile payment application to complete the transaction**

82. *Low* teaches that the user device 110 may receive inventory data 154 from a vending machine 120 “using an Internet connection of user device 110 *after a short range communication link is established* between user device 110 and

vending machine 120.” Ex. 1005, 8:24–28 (emphasis added). “Inventory data 154 may correspond generally to data of...purchasable products at vending machine 120.” *Id.*, 8:22–24. Referring to Figure 3 of *Low* (reproduced below), “a flowchart illustrating a method for use by a user device for an electronic payment to a non-Internet connected device” is shown. *Id.*, 10:1–3.

FIG. 3

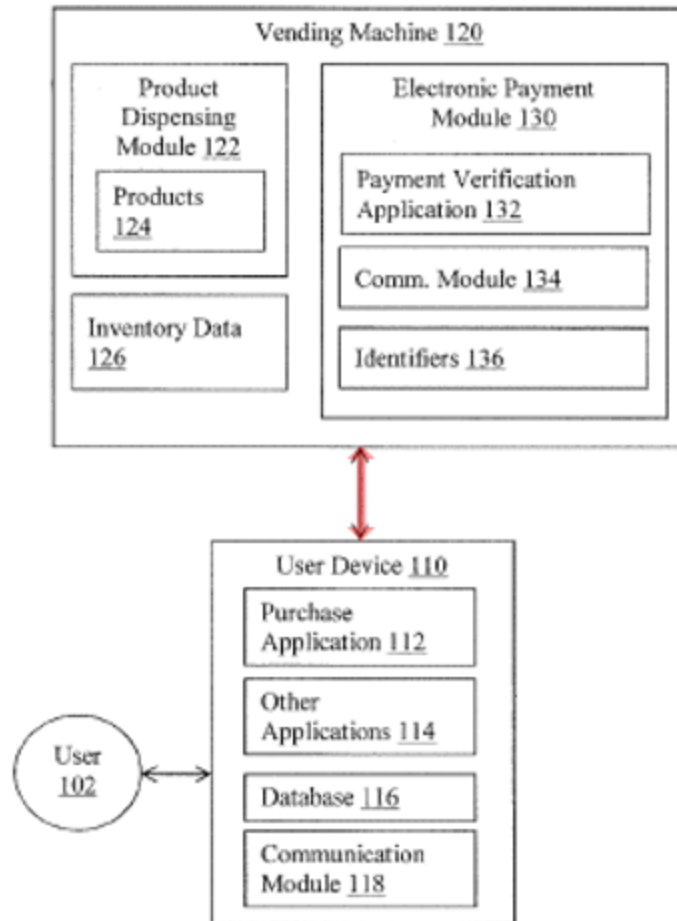


Ex. 1005, Figure 3.

83. Furthermore, it is my understanding that the bi-directional arrow (shown in red below) between the user device 110 and the vending machine 120 of

Figure 1 of *Low* reflects an established communication path between the user device 110 and the vending machine 120, as shown in the excerpt of Figure 1 below.

FIG. 1



Ex. 1005, Figure 1 (excerpted).

84. Thus, it is my opinion that *Low* teaches after establishing the wireless communication path (e.g., “communication link is established,” “device[s] are paired”), enabling user interaction with the user interface of the mobile payment application (e.g., purchase application 112) to complete the transaction (e.g., “a

method for use by a user device for an electronic payment to a non-Internet connected device,” as shown in Figure 3 of *Low*).

**I. [1.11] exchanging information with the available payment accepting unit via the one or more radio transceivers, in conjunction with the transaction**

85. *Low* teaches that “[e]lectronic payment module 130 includes generally a payment verification application 132, communication module 134, and identifiers 136 necessary to effectuate and verify and electronic payment of products 124.” Ex. 1005, 5:54–57. “Payment verification application 132...may receive an approval of a payment from user device 110, verify the approval, and dispense items purchased from products 124 using product dispensing module 122.” *Id.*, 5:66–6:3. *Low* teaches that this information is exchanged via the “communication module 134 [which is] adapted to communicate with user device 110” via “wireless short range communication devices including microwave, radio frequency, infrared, Bluetooth, and near field communication devices.” *Id.*, 6:9–15.

86. Thus, it is my opinion that *Low* teaches exchanging information (e.g., information such as approval of payment) with the available payment accepting unit via the one or more radio transceivers (e.g., “wireless short range communication devices”), in conjunction with the transaction (e.g., approval of payment is in conjunction with the transaction).

- m. **[1.12] after exchanging the information, displaying, on the display, an updated user interface of the mobile payment application to the user of the mobile device**

87. *Low* teaches user device 110 may “display to user 102...lists of products 124,” and “[i]nventory data 126 may...adjust viewable inventory levels of products 124 for display to user 102.” Ex. 1005, 8:31–33, 9:8–11. I understand this to mean that after a product 124 is purchased at a vending machine 120, the user device 110 displays an updated inventory level of products 124 to account for that purchased product (i.e., displaying one less product available for purchase).

88. Thus, it is my opinion that *Low* teaches after exchanging the information, displaying, on the display (i.e., display 511), an updated user interface (i.e., “adjust[ed] viewable inventory”) of the mobile payment application (i.e., purchase application 112) to the user of the mobile device (i.e., user device 110).

89. Additionally or alternatively, at a minimum, it is my understanding that *Low* teaches a user device 110 having a user interface that would revert to its initial, pre-transaction state following the completion of the transaction so that the user device 110 could be utilized to complete a subsequent transaction.

90. This reversion by the user interface back to its initial, pre-transaction state likewise represents “displaying, on the display, an updated user interface of the mobile payment application to the user of the mobile device.”

91. Accordingly, it is my opinion that *Low* discloses all limitations of, and therefore anticipates, Claim 1.

## 2. Obviousness Standards and Analysis

92. I have been informed by counsel that questions of obviousness under 35 U.S.C. § 103(a) are resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; and (3) the level of skill in the art.

### a. Differences Between the Claimed Subject Matter and *Low*

93. *Low* does not explicitly disclose that its user device includes an accelerometer, such that “based on data from the accelerometer, determining whether the user is walking away from the available payment accepting unit[,] and in accordance with a determination that the user is walking away from the available payment accepting unit, canceling the wireless communication path,” as recited in dependent Claim 7.

94. However, *Arora* explicitly discloses a personal electronic device that includes an “accelerometer” (Ex. 1006, 26:65–27:6), and the location of a customer relative to two vending machines 30, 31 and a defined transaction distance therefrom may be determined through data from the accelerometer. *Id.*, 13:28–35.

95. It is my opinion that because *Arora* determines the customer is walking away from the vending machine based on data from the accelerometer, then *Arora*

renders obvious cancelling the wireless communication path between the personal electronic device and the vending machine.

**b. Obviousness Rationale for Why a POSA Would Have Modified *Low* with *Arora* to Arrive at the Claimed Subject Matter**

96. In my opinion, a POSA would have been motivated to modify the user device of *Low* to include an accelerometer and cancel the wireless communication path between the user device and the vending machine if data from the accelerometer indicates that the user device was moving away from the vending machine, as taught by *Arora*.

97. As just one example, A POSA would have found it obvious to modify *Low* with *Arora* in this manner because such a modification would represent use of a known technique to improve similar devices in the same way with a reasonable expectation of success.

98. Additionally, *Low* discloses establishing a connection between the user device 110 and the vending machine 120 via “a short range communication link.” Ex. 1005, 8:24–28. A near-field communication is, by definition, limited by the distance at which it can transmit information.

99. Thus, the vending machine could only communicate with the user device at a certain range, further motivating a POSA to cancel the communication path between the vending machine and user device if data from the accelerometer

indicated that the user was departing or walking toward the limits of the range of near field communication to, among other things, conserve resources by preventing the vending machine 120 of *Low* from trying to maintain a short range communication link with a user device 110 that is moving away from the vending machine 120.

100. That is, *Arora* provided a finite number of approaches to determining a customer's location: "Determining customer 17 location may use one or more technologies, including GPS 11, cellular geolocation 15, LAN identification from access points such as 22 and 20, inertial guidance, vision based location determination, RFID, badge reading (not shown in FIG. 2), NFC 21, manual location entry by the customer, 17, and other technologies." Ex. 1006, 13:28–32. That location is used to determine the zones and communication that should occur with particular devices.

101. One of ordinary skill in the art would have understood that maintaining connections requires resources on both ends of the connection (i.e., between the user device and the vending machine), and that such connections should not remain active when not needed in order to preserve those resources for other interactions.

102. Therefore, a POSA would have understood that it was necessary to cancel or close those connections when no longer needed. Given the finite number of approaches for determining that a connection is no longer needed when a user

moves away from a vending machine, it would have been obvious to a POSA armed with *Low* to implement the “inertial guidance” taught by *Arora* for this purpose.

**c. Obviousness Rationale for How a POSA Would Have Modified *Low* with *Arora* to Arrive at the Claimed Subject Matter**

103. Once motivated to modify *Low* with *Arora*, it is my opinion that a POSA would have (i) readily understood how to do so with a reasonable expectation of success and (ii) found it obvious and routine to implement any modifications needed to make those combinations work.

104. For example, a POSA would have understood that the accelerometer present in a mobile device, such as that described in *Arora*, was one of a finite possible means described in *Arora* to determine the location or trajectory of a user. Using that information to cancel the wireless connection when the user was walking away from the vending machine would have been a simple modification to the system of *Low* to conserve resources.

105. Additionally or alternatively, it would have been within the knowledge of a POSA at the time to understand that conservation of resources would be desirable to reduce costs and energy. Armed with the understanding that the location and trajectory of a user can be determined based on the teachings of *Arora*, a POSA would have understood that cancelling the wireless communication path would

conserve resources in situations where the user was walking away from the vending machine and was thus no longer a potential customer.

**3. Each Element of Claim 7 is Rendered Obvious by *Low* in View of *Arora***

106. Claim 7 recites: “The method of claim 1, wherein the mobile device includes an accelerometer and the method further comprises: based on data from the accelerometer, determining whether the user is walking away from the available payment accepting unit; and in accordance with a determination that the user is walking away from the available payment accepting unit, canceling the wireless communication path.”

107. I have already explained why and how a POSA would have modified *Low* with *Arora*.

**a. [7.1] wherein the mobile device includes an accelerometer**

108. *Arora* discloses a personal electronic device 18 that includes an “accelerometer.” Ex. 1006, 13:34–35, 26:65–27:6.

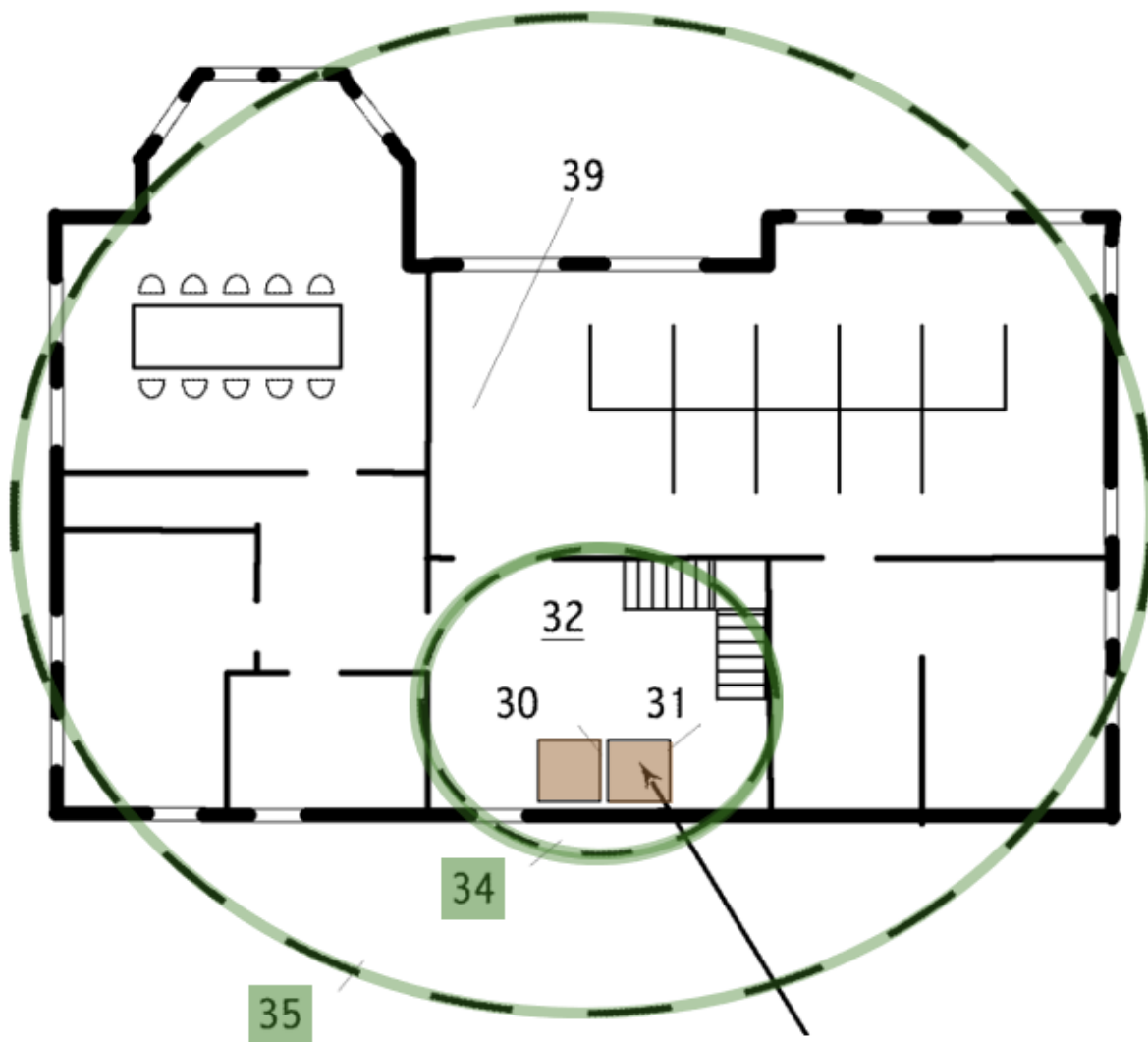
109. Thus, it is my opinion that *Low* in view of *Arora* teaches wherein the mobile device (e.g., personal electronic device 18) includes an accelerometer (e.g., “accelerometer”).

**b. [7.2] and the method further comprises: based on data from the accelerometer, determining whether the**

**user is walking away from the available payment  
accepting unit**

110. *Arora* discloses two vending machines 30, 31 that define multiple transaction distances from the vending machines 30, 31, including a “within sight” distance 34 and a “potential buyer” distance 35. Ex. 1006, 12:34–13:5, Figure 1 (excerpt reproduced below).

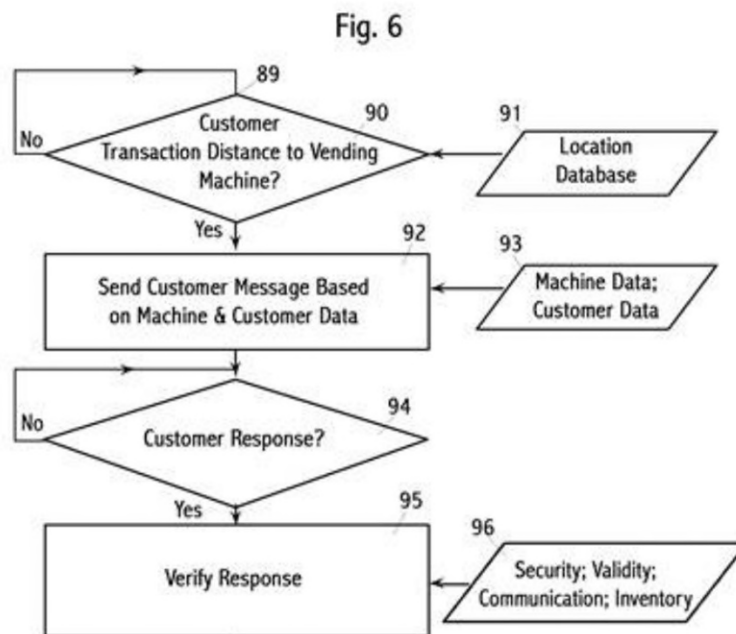
Fig. 1



Ex. 1006, Figure 1 (excerpt).

111. *Arora* further discloses a personal electronic device that includes an “accelerometer” (*id.*, 26:65–27:6), and the location of the customer relative to the vending machines 30, 31 and the defined distances 34, 35 may be determined through “[i]nertial guidance [which] may use an accelerometer and other sensors in the customer 17’s personal electronic device 18.” *Id.*, 13:28–35. Based, in part, on the inertial guidance, if *Arora* determines the customer is located within the transaction distance, “a message appropriate to the potential transaction is sent to the customer,” including “inventory in the vending machine(s).” *Id.*, 18:37–51, Figure 6.

112. *Arora* further describes a method for a customer to purchase a product, referring to Figure 6, a portion of which is reproduced below.



Ex. 1006, Figure 6.

113. At step 90, the system in *Arora* determines whether a customer is within a transaction distance based on location information 91, and, if yes, sends the customer a message at step 92. *Id.*, 18:39–53. Then, the system waits for a customer response at step 94 and verifies the validity of the response at step 95. *Id.*, 18:53–58. “There are many ways to verify validity, as those trained in the art know. For example, the message may...fall within predetermined bounds such as *time*, *location*... .” *Id.*, 18:57–64 (emphasis added).

114. Given *Arora*’s prior teachings of determining customer location through inertial guidance, the verification of the message through predetermined bounds such as time and location clearly encompasses determining whether the customer is walking away from the machine. This is further supported by *Arora* specifying that step 90 and the determination of the customer location is based on “[t]ransaction distances [that] are discussed elsewhere, herein.” *Id.*, 18:39–43. “If the customer response fails verification, the flowchart reverts to step 90 or 92.” *Id.*, 18:65–67.

115. Thus, it is my opinion that *Low* in view of *Arora* teaches based on data from the accelerometer, determining whether the user is walking away from the available payment accepting unit (e.g., *Arora*’s teachings of determining customer

location based on “[i]nertial guidance [which] may use an accelerometer...in the customer 17’s personal electronic device 18”).

- c. **[7.3] and the method further comprises: ...in accordance with a determination that the user is walking away from the available payment accepting unit, canceling the wireless communication path**

116. Additionally, because *Arora* describes when the inertial guidance indicated that the personal electronic device was moving away from the vending machine, then a POSA would have been motivated to incorporate these teachings from *Arora* into *Low* to cancel the wireless communication path between the personal electronic device and the vending machine to conserve resources.

117. Thus, it is my opinion that *Low* in view of *Arora* teaches in accordance with a determination that the user is walking away from the available payment accepting unit, canceling the wireless communication path (e.g., a POSA armed with *Low* would have been motivated to cancel the wireless communication path between the user device 110 and the vending machine 120 to conserve resources if it was determined that the user device 110 was moving away from the vending machine 120).

- B. **Ground 2: Claim 11 is Rendered Obvious Under 35 U.S.C. § 103 Over *Low* in View of *Arora* in Further View of *Freeny* and *Casey***
  1. ***Low* Discloses All Elements of Claim 1, From Which Claim 11 Depends**

118. *See supra* Section IX.A.1.

## 2. Obviousness Standards and Analysis

119. *See supra* Section IX.A.2.

### a. Differences Between the Claimed Subject Matter and *Low*

120. *Low* teaches almost every element of dependent Claim 11. *See supra* Section IX.A.1. Specifically, *Low* teaches “[c]omputer system 500 includes...an input/output (I/O) component 504 that processes a user action, such as selecting keys from a keypad/keyboard, selecting one or more *buttons or links, etc.*,” (Ex. 1005, 12:39–46 (emphasis added)) and “the user selects a *payment button or option* on the user device” (*id.*, 2:46–49 (emphasis added)).

121. However, *Low* does not explicitly disclose that the user interface of the purchase application 112 includes “a visual representation of the available payment accepting unit,” as recited in Claim 11.

122. However, *Arora*, which is in the same field of endeavor as *Low*—conducting a transaction at an unmanned machine with a user device—explicitly discloses a user interface including “a visual representation of the available payment accepting unit,” and it is my opinion that a POSA would have found it obvious to modify *Low* to include this feature.

123. Specifically, *Arora* discloses a personal electronic device 40 including “two different vending machines, 41 and 42” displayed on the screen of the personal electronic device 40. Ex. 1006, 13:47–49, Figure 3.

124. Additionally, *Low* does not explicitly disclose that the user interface of the purchase application 112 includes “an indication of a prepared balance,” as recited in Claim 11.

125. However, *Freeny*, which is also in the same field of endeavor as *Low*, explicitly discloses a user interface including “an indication of a prepared balance,” and it is my opinion that a POSA would have found it obvious to modify *Low/Arora* to include this feature.

126. Specifically, *Freeny* discloses a customer performing a “customer bank balance request after the customer is connected to their bank,” where an “approved credit amount” “can be checked at any time by the user of the proximity authorization unit.” Ex. 1007, 9:32-35, 38:3-5.

127. Finally, *Low* does not explicitly disclose that the user interface of the purchase application 112 includes “an affordance that when slid, indicates the initiation of the transaction” and “wherein the affordance is slid in response to receiving a user input of swipe on the affordance displayed on the display of the mobile device,” as recited in Claim 11.

128. However, *Casey*, which is in the same field of endeavor as *Low*—conducting a transaction at an unmanned machine with a user device—explicitly discloses a slide bar 182 whereby “a user may drag the slide bar to the left to the decline position 186 to decline the payment or the user may drag the slide bar 182

to the right to the confirmation position 188 to confirm the payment transaction.”

Ex. 1008, 13:44–51.

**b. Obviousness Rationale for Why a POSA Would Have Modified *Low* with *Arora*, *Freeny*, and *Casey* to Arrive at the Claimed Subject Matter**

129. In view of the collective teachings of *Low*, *Arora*, *Freeny*, and *Casey* it would have been obvious to a POSA to include in the user interface of the purchase application 112 of *Low* any suitable graphical user interface elements that would be “convenient...to permit user 102 to select, purchase, and dispense products for sale at a vending machine 120” (Ex. 1005, 3:57–60), a visual representation of the available payment accepting unit, as taught by *Arora*, an indication of a prepared balance, as taught by *Freeny*, and an affordance that is slid in response to a user input of a swipe to indicate initiation of the transaction, as taught by *Casey*.

**(1) Modifying *Low* with *Arora***

130. A POSA would have found it obvious to modify *Low* with *Arora* based on, at a minimum, the express teachings in *Low*.

131. Specifically, *Low*’s disclosure that “[u]ser device 110 may further include one or more identifiers 136 which may be implemented, for example, as...other appropriate data used for authentication/identification of vending machine 120” (*id.*, 6:16-22), and that “the user may utilize a user device to...receive locations of available NICMs” and “directions, map coordinates, and/or a GPS location of

desired NICM” (*id.*, 9:14-23) indicates that *Low*, to the extent it does not explicitly do so, provides—under the former, more rigid “TSM” standard—a teaching, suggestion, or motivation to a POSA to modify the user interface to include “a visual representation of the available payment accepting unit,” such as that taught by *Arora*.

132. Specifically, in my opinion, providing a visual representation of the available payment accepting unit (i.e., “icons or photographs, 41 and 42 [that] are representative of two actual machines,” as taught by *Arora*) would make the user interface of *Low* more “convenient,” for example, if the user of the user device 110 might have difficulty interpreting textual descriptions to identify the desired payment accepting unit.

133. As another example, some users may find visual representations of available payment accepting units to be more “convenient” when interacting with the user interface of *Low* as this would improve the speed and efficiency of the user selecting the desired payment accepting unit.

134. In addition to *Low* expressly describing the user device 110 including machine identifiers and receiving data regarding desired machines, there are a variety of other rationales for why a POSA would have been motivated to modify the user interface of *Low* to include a visual representation of the available payment accepting unit (i.e., “icons or photographs, 41 and 42 [that] are representative of two actual machines”), as taught by *Arora*.

135. First, modifying *Low*'s user interface, which is not expressly described as including a visual representation of the available payment accepting unit, to include the machine icon interface elements 41, 42 taught by *Arora*'s user interface reflects a simple combination of prior art elements (i.e., *Low*'s user interface lacking a visual representation of the available payment accepting unit with *Arora*'s user interface that includes the machine icons 41, 42) to yield predictable results. This is because in my opinion, presenting machine icons 41, 42 of *Arora*'s user interface on the user interface of the purchase application 112 of *Low* would predictably allow a user to easily identify the machine they wish to purchase from.

136. Second, replacing a portion of *Low*'s user interface lacking a visual representation of the available payment accepting unit with the portion of *Arora*'s user interface that includes the machine icons 41, 42 represents a simple substitution of one known element (i.e., a portion of *Low*'s user interface lacking a visual representation of the available payment accepting unit) for another (i.e., the portion of *Arora*'s user interface that includes the machine icons 41, 42) to obtain predictable results, because in my opinion, presenting machine icons 41, 42 on the user interface of the purchase application 112 of *Low* would predictably allow a user to easily identify the machine they wish to purchase from.

137. Third, both *Low* and *Arora* disclose user devices (i.e., user device 110 of *Low* and personal electronic device 40 of *Arora*) configured to complete a

transaction at a payment accepting unit (i.e., vending machine 120 of *Low* and vending machines 41, 42 of *Arora*) in proximity to the user of the user device. Ex. 1005, 3:20–23; Ex. 1006, 13:47–52. Therefore, implementing a visual representation of the available payment accepting unit (i.e., “icons or photographs, 41 and 42 [that] are representative of two actual machines”), as taught by *Arora*, on the user interface of the user device 110 of *Low* represents use of a known technique (i.e., displaying “icons or photographs, 41 and 42 [that] are representative of two actual machines”) to improve similar devices (i.e., user devices) in the same way (i.e., displaying, as a graphical user interface element on a graphical user interface, an available payment accepting unit).

138. Fourth, implementing a visual representation of the available payment accepting unit (i.e., “icons or photographs, 41 and 42 [that] are representative of two actual machines”), as taught by *Arora*, on the user interface of the user device 110 of *Low* represents applying a known technique (i.e., displaying “icons or photographs, 41 and 42 [that] are representative of two actual machines”) to a known device (i.e., user device) ready for improvement (i.e., the user device 110 of *Low* could be improved by providing a more “convenient” visual representation of the available vending machine 120 to purchase from) to yield predictable results, because in my opinion, presenting machine icons 41, 42 on the user interface of the

purchase application 112 of *Low* would predictably allow a user to easily identify the machine they wish to purchase from.

139. Fifth, a POSA armed with *Low* would have found it “obvious to try” to provide a visual representation of the available payment accepting unit (i.e., “icons or photographs, 41 and 42 [that] are representative of two actual machines”), as taught by *Arora*, on the user interface of *Low*, because doing so represents one of a finite number of identified, predictable solutions, with a reasonable expectation of success, because in my opinion, presenting machine icons 41, 42 on the user interface of the purchase application 112 of *Low* would predictably allow a user to easily identify the machine they wish to purchase from.

140. Sixth, the known work of providing “icons or photographs, 41 and 42 [that] are representative of two actual machines” on a user interface, as taught by *Arora*, in the field of endeavor of conducting a transaction at an unmanned machine with a user device would have prompted a POSA to implement a variation of it (i.e., a similar icon or photograph of available vending machines 120 displayed on the user interface of the user device 110 of *Low*) based on the design incentives of a visual representation providing a more “convenient interface to permit user 102 to select, purchase, and dispense products for sale at a vending machine 120.” Ex. 1005, 3:57–60. A POSA would have found such a variation to be obvious because in my opinion, presenting machine icons 41, 42 on the user interface of the purchase

application 112 of *Low* would predictably allow a user to easily identify the machine they wish to purchase from.

**(2) Modifying *Low/Arora* with *Freeny***

141. In my opinion, a POSA would have found it obvious to modify *Low/Arora* with *Freeny* based on, at a minimum, the express teachings in *Low*.

142. Specifically, *Low* teaches that “user device 110 may request funding source information...[which] may include a funding card and/or a user account.” Ex. 1005, 10:34–38. The funding source information is used by the payment provider server 440 to “check[] for adequate funds and charg[e] the account/funding card.” *Id.*, 11:64–66. These teachings indicate that *Low*, to the extent it does not explicitly do so, provides—under the former, more rigid “TSM” standard—a teaching, suggestion, or motivation to a POSA to modify the user interface to include “an indication of a prepared balance” (i.e., an “approved credit amount” that “can be checked at any time by the user of the proximity authorization unit,” as taught by *Freeny*).

143. Specifically, in my opinion, providing an indication of a prepared balance (i.e., an “approved credit amount” that “can be checked at any time by the user of the proximity authorization unit,” as taught by *Freeny*) would make the user interface of *Low* more “convenient,” for example, by providing the user with information regarding the funds that are available to purchase items at the vending

machine 120. This would allow the user to make informed purchasing decisions, such that when the payment provider server 440 “check[s] for adequate funds and charg[es] the account/funding card” (Ex. 1005, 11:64–66), the user has confidence that the transaction will be accepted.

144. In addition to *Low* expressly describing the user device 110 requesting funding source information to ensure there are adequate funds available, there are a variety of other rationales for why a POSA would have been motivated to modify the user interface of *Low/Arora* to include an indication of a prepared balance (i.e., an “approved credit amount” that “can be checked at any time by the user of the proximity authorization unit”), as taught by *Freeny*.

145. First, modifying the user interface of *Low/Arora*, which lacks an indication of a prepared balance, with *Freeny’s* user interface that includes an “approved credit amount” that “can be checked at any time by the user of the proximity authorization unit,” represents a combination of prior art elements (i.e., the user interface of *Low/Arora* lacking an indication of a prepared balance with *Freeny’s* user interface that includes an “approved credit amount”) to yield predictable results. This is because, in my opinion, presenting the “approved credit amount” of *Freeny’s* user interface on the user interface of the purchase application 112 of *Low/Arora* would predictably inform a user of the funds that are available to purchase items from the machine.

146. Second, replacing a portion of the user interface of *Low/Arora* lacking an indication of a prepared balance with the portion of *Freeny's* user interface that includes the “approved credit amount” represents a simple substitution of one known element (i.e., a portion of the user interface of *Low/Arora* lacking an indication of a prepared balance) for another (i.e., the portion of *Freeny's* user interface that includes the “approved credit amount”) to obtain predictable results, because in my opinion, presenting the “approved credit amount” of *Freeny's* user interface on the user interface of the purchase application 112 of *Low/Arora* would predictably inform a user of the funds that are available to purchase items from the machine.

147. Third, both *Low/Arora* and *Freeny* disclose user devices (i.e., user device 110 of *Low*, as modified by *Arora*, and wireless device 40 of *Freeny*) configured to complete a transaction at a payment accepting unit (i.e., vending machine 120 of *Low* and vending machine system 738 of *Freeny*) in proximity to the user of the user device. Ex. 1005, 3:20–23; Ex. 1007, 9:60–10:2. Therefore, implementing an indication of a prepared balance (i.e., an “approved credit amount”), as taught by *Freeny*, on the user interface of the user device 110 of *Low*, as modified by *Arora*, represents use of a known technique (i.e., displaying an “approved credit amount”) to improve similar devices (i.e., user devices) in the same way (i.e., displaying, as a graphical user interface element on a graphical user interface, an “approved credit amount”).

148. Fourth, implementing an indication of a prepared balance (i.e., an “approved credit amount”), as taught by *Freeny*, on the user interface of the user device 110 of *Low*, as modified by *Arora*, represents applying a known technique (i.e., displaying an “approved credit amount”) to a known device (i.e., user device) ready for improvement (i.e., the user device 110 of *Low*, as modified by *Arora*, could be improved by providing a more “convenient” an indication of a prepared balance) to yield predictable results, because, in my opinion, presenting the “approved credit amount” of *Freeny*’s user interface on the user interface of the purchase application 112 of *Low/Arora* would predictably inform a user of the funds that are available to purchase items from the machine.

149. Fifth, a POSA armed with *Low/Arora* would have found it “obvious to try” to provide an indication of a prepared balance (i.e., an “approved credit amount”), as taught by *Freeny*, on the user interface of *Low*, as modified by *Arora*, because doing so represents one of a finite number of identified, predictable solutions, with a reasonable expectation of success, because, in my opinion, presenting the “approved credit amount” of *Freeny*’s user interface on the user interface of the purchase application 112 of *Low/Arora* would predictably inform a user of the funds that are available to purchase items from the machine.

150. Sixth, the known work of providing an “approved credit amount” on a user interface, as taught by *Freeny*, in the field of endeavor of completing a

transaction at a vending machine with a user device would have prompted a POSA to implement a variation of it (i.e., a similar graphical user interface element of an approved credit amount on the user interface of the user device 110 of *Low*, as modified by *Arora*) based on the design incentives of an approved credit amount providing a more “convenient interface to permit user 102 to select, purchase, and dispense products for sale at a vending machine 120.” Ex. 1005, 3:57–60. A POSA would have found such a variation to be predictable because in my opinion, presenting the “approved credit amount” of *Freeny*’s user interface on the user interface of the purchase application 112 of *Low/Arora* would predictably inform a user of the funds that are available to purchase items from the machine.

### (3) **Modifying *Low/Arora/Freeny* with *Casey***

151. A POSA would have found it obvious to modify *Low/Arora/Freeny* with *Casey* because, as just one example, a graphical user interface element that can be slid in response to a user input of a swipe represents one of a finite number of identified, predictable solutions, with a reasonable expectation of success.

152. Specifically, in my opinion, the user interface of *Low* can include any suitable graphical user interface elements responsive to any suitable user inputs, such as taps, swipes, or other gestures.

153. *Casey* presents a POSA with one of a finite number of identified, predictable solutions, i.e., a slide bar 182 “that may be moved to the right or to the

left using the touch screen 54,” whereby “a user may drag the slide bar to the left to the decline position 186 to decline the payment or the user may drag the slide bar 182 to the right to the confirmation position 188 to confirm the payment transaction.” Ex. 1008, 13:44–51.

**c. Obviousness Rationale for How a POSA Would Have Modified *Low* with *Arora*, *Freeny*, and *Casey* to Arrive at the Claimed Subject Matter**

154. Once motivated to modify *Low* with *Arora*, *Low/Arora* with *Freeny*, and *Low/Arora/Freeny* with *Casey*, it is my opinion that a POSA would have (i) readily understood how to do so with a reasonable expectation of success and (ii) found it obvious and routine to implement any modifications needed to make those combinations work.

155. For example, a POSA would have understood that the user interface of the purchase application 112 of *Low* could display a variety of information based on the nature of graphical user interfaces and *Low*'s teachings that the “purchase application 112 may be implemented as a downloadable application having a user interface enabling the user to purchase products for sale at vending machine 120” or “may correspond more generally to a web browser configured to view information available over the Internet or access a website corresponding to products purchasable at vending machine 120.” Ex. 1005, 3:57–4:2.

156. In my opinion, modifying the purchase application 112, e.g., by modifying the software corresponding to the purchase application 112 or modifying the website that the purchase application 112 accesses, would have been a simple and routine task by a POSA to display whichever graphical user interface elements are desired, including “a visual representation of the available payment accepting unit,” “an indication of a prepared balance,” and an affordance configured to receive a user input, wherein “the user input is a swipe that causes the affordance to be slid,” as recited in Claim 11.

**3. Each Element of Claim 11 is Rendered Obvious by *Low* in View of *Arora* in Further View of *Freeny* and *Casey***

**a. [11.1] wherein the user interface of the mobile payment application, after establishing the wireless communication path, includes a visual representation of the available payment accepting unit**

157. *Low* teaches that the user device 110 receives information from a vending machine 120 “using an Internet connection of user device 110 *after a short range communication link is established* between user device 110 and vending machine 120.” Ex. 1005, 8:24–28 (emphasis added). *Low* teaches that a NICM “transmits a machine identifier to the user device.” Ex. 1005, 2:16–20; 2:26–28. *Low* further teaches that the user device 110 may “receive a machine identifier from identifiers 136.” *Id.*, 8:66–9:2. *Low* teaches that the user device may “receive locations of available NICMs.” *Id.*, 9:16–21.

158. In my opinion, a POSA would have understood that the purchase application 112 of *Low* includes a user interface including a visual representation of one or more payment accepting units because *Low* teaches that “the user is able to select one or more machines to purchase from,” which selection would necessarily occur by virtue of the user making the selection through the user interface of the purchase application 112.

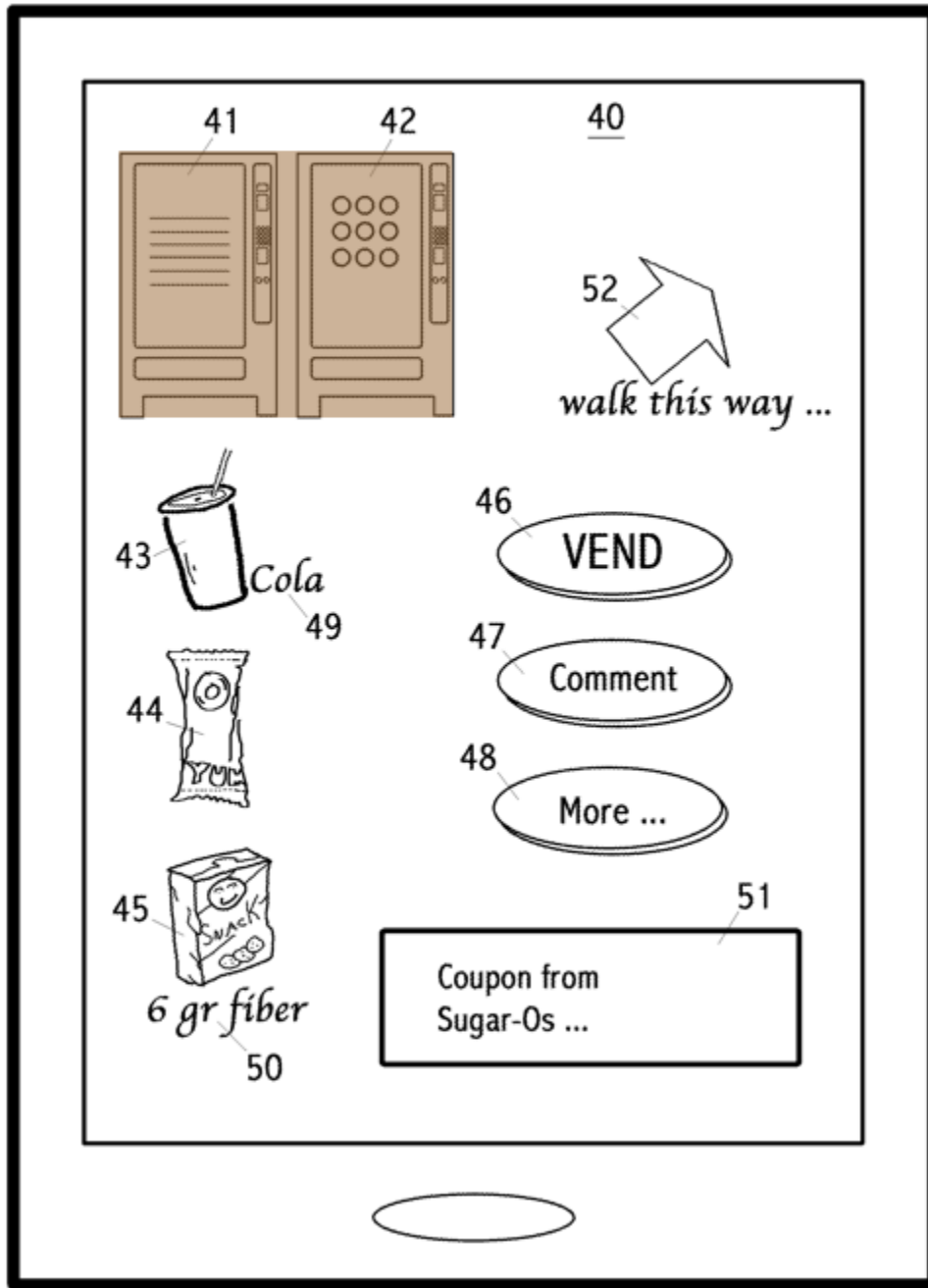
159. Thus, it is my opinion that *Low* teaches wherein the user interface (i.e., “interface”) includes a visual representation of the available payment accepting unit (i.e., a POSA would understand that *Low*’s teaching that “the user is able to select one or more machines to purchase from” means the user interface of the user device 110 displays a visual representation of the available machine).

160. However, to the extent Patent Owner may argue that *Low* does not explicitly teach “wherein the user interface includes a visual representation of the available payment accepting unit,” *Arora* does, and it is my opinion that it would have been obvious to modify the user interface of *Low* to include a visual representation of one or more payment accepting units, as taught by *Arora*, with a reasonable expectation of success.

161. Specifically, Figure 3 of *Arora* (reproduced below) “shows an exemplary screen on a personal electronic device, 40” including “two different vending machines, 41 and 42,” shown in brown below. Ex. 1006, 13:47–49, Figure

3. *Arora* further teaches that “the icons or photographs, 41 and 42 are representative of two actual machines co-located with a customer and owner of the personal electronic device, whose screen is shown, 40,” and “the customer selects which machine she wishes to use by touching icon 41 or 42.” *Id.*, 13:49–54.

Fig. 3



Ex. 1006, Figure 3 (annotated).

162. I have already explained why and how a POSA would modify *Low* with *Arora*.

163. Thus, *Low* in view of *Arora* teaches wherein the user interface of the mobile payment application (e.g., *Low*'s user interface of the purchase application 112), after establishing the wireless communication path ("110 after a short range communication link is established"), includes a visual representation of the available payment accepting unit (e.g., *Low*'s user interface modified to include visual representations of one or more payment accepting units, such as the visual representations of the "two different vending machines, 41 and 42," as taught by *Arora*).

**b. [11.2] an indication of a prepared balance**

164. *Low* teaches that "user device 110 may request funding source information," which "may include a funding card and/or a user account." Ex. 1005, 10:34–38. *Low* further teaches that "user device 410 may communicate the purchase request to payment service provider 440," which "may validate the funding source, *such as by checking for adequate funds* and charging the account/funding card." *Id.*, 11:56–66 (emphasis added).

165. I understand *Low*'s teachings of the user device requesting funding source information including a funding card and/or a user account and the server validating that there are adequate funds to complete the transaction as strongly implying that the user interface includes an indication of a prepared balance.

166. Thus, *Low* in view of *Arora* teaches the user interface (e.g., “interface” of *Low*) includes an indication of a prepared balance (e.g., “funding source information” of *Low*).

167. However, to the extent Patent Owner may argue that *Low* in view of *Arora* does not explicitly teach “the user interface includes...an indication of a prepared balance,” *Freeny* does, and it is my opinion that it would have been obvious to modify *Low/Arora* with the indication of a prepared balance, such as taught by *Freeny*, with a reasonable expectation of success.

168. Specifically, *Freeny* teaches a customer performing a “customer bank balance request after the customer is connected to their bank.” Ex. 1007, 9:32–35. An approved credit amount “can be checked at any time by the user of the proximity authorization unit.” *Id.*, 38:3–5.

169. I understand displaying an approved credit amount and credit balance as constituting an indication of a prepared balance.

170. I have already explained why and how a POSA would modify *Low/Arora* with *Freeny*.

171. Thus, *Low* in view of *Arora* in further view of *Freeny* teaches the user interface (e.g., *Low*’s user interface of the user device 110) includes an indication of a prepared balance (e.g., *Low*’s user interface modified to include the approved credit amount and credit balance as taught by *Freeny*).

c. **[11.3] an affordance that when slid, indicates the initiation of the transaction**

172. *Low* teaches the “user selects a payment button or option on the user device, which communicates the payment request to a payment provider.” Ex. 1005, 2:46-49. “After processing, the payment provider may approve the payment request,” “transmit a purchase authorization to the user device,” and “[t]he user device may then communicate the purchase authorization to the machine, which may...dispense the purchased items(s) associated with the transaction number.” *Id.*, 2:49–62.

173. In the related district court litigation, Patent Owner has argued that for a related patent, a similar “sliding” limitation is satisfied by a “Pay” button with no sliding functionality. *See* Ex. 1017 at 14 (Patent Owner arguing a “Pay” button is equivalent to an affordance that slides and stating “the differences between the pressed button and a swiped affordance would be regarded by a POSITA to be insubstantial”).

174. To the extent Patent Owner’s interpretation is correct, *Low* teaches this limitation.

175. Specifically, *Low* teaches “[c]omputer system 500 includes...an input/output (I/O) component 504 that processes a user action, such as selecting keys from a keypad/keyboard, selecting one or more *buttons* or links, etc.,” (Ex. 1005,

12:39–46) and “the user *selects a payment button or option* on the user device” (*id.*, 2:46–49).

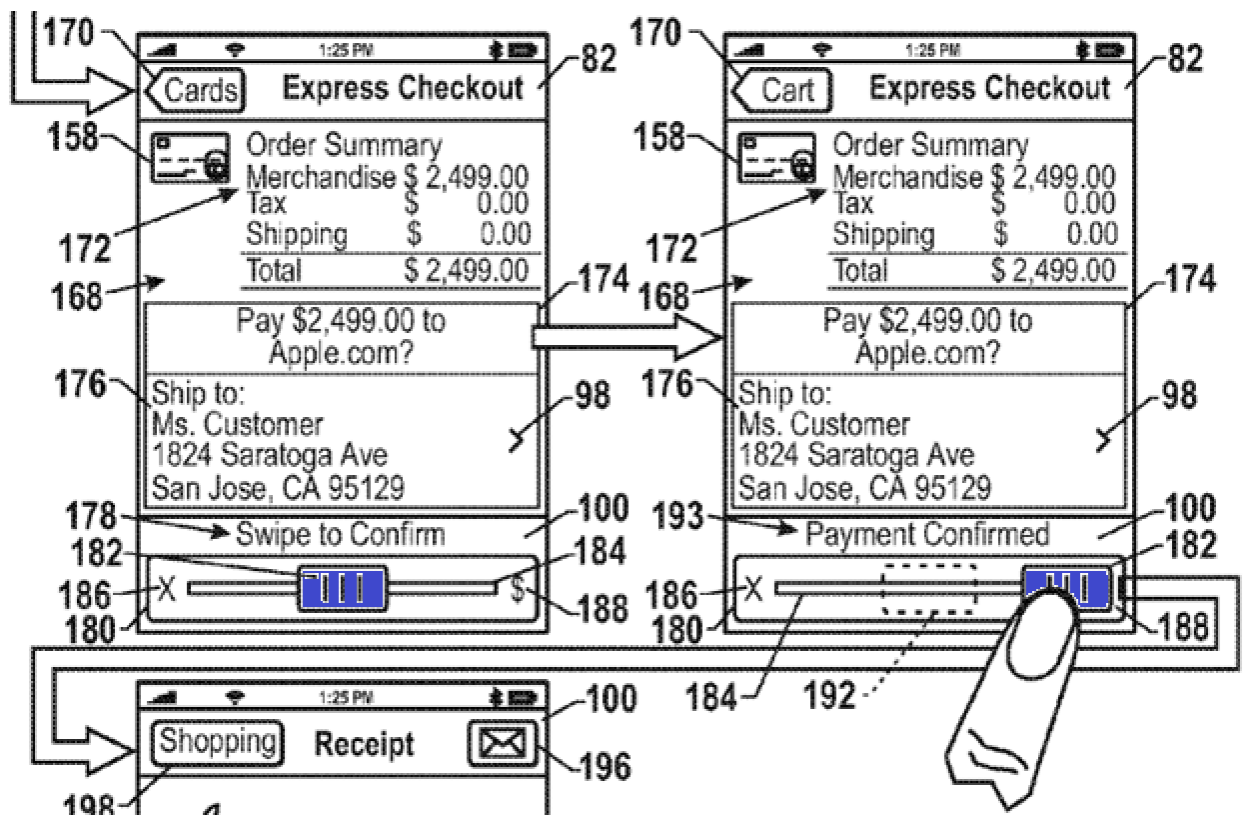
176. Insofar as the Board interprets this limitation as being satisfied by a graphical user interface element that slides, a POSA would understand that *Low* contemplates that any suitable user action is acceptable, and a user input swiping a graphical user interface element that slides is just one example of an acceptable input that was well known in the art at the time of the ’772 Patent.

177. Thus, consistent with Patent Owner’s interpretation for a related, similar claim limitation, *Low* in view of *Arora* in further view of *Freeny* teaches the user interface (e.g., *Low*’s user interface of the user device 110) includes an affordance (e.g., “payment button or option on the user device”) that when slid (e.g., “the user selects a payment button or option on the user device”), indicates initiation of the transaction (e.g., “the user selects a payment button or option on the user device, which communicates the payment request to a payment provider,” resulting in the purchased item(s) being dispensed).

178. To the extent the Board disagrees with Patent Owner’s interpretation that pressing a pay button is equivalent to “sliding,” *Casey* teaches wherein the user input is a swipe that causes the affordance to be slid, as set forth below.

**d. [11.4] wherein the affordance is slid in response to receiving a user input of swipe on the affordance displayed on the display of the mobile device**

179. Casey discloses a slide bar 182 (shown in blue below) whereby “a user may drag the slide bar to the left to the decline position 186 to decline the payment or the user may drag the slide bar 182 to the right to the confirmation position 188 to confirm the payment transaction.” Ex. 1008, 13:44–51.




Ex. 1008, Figure 5 (excerpted/annotated).

180. I have already explained why and how a POSA would modify *Low/Arora/Freeny* with *Casey*.

181. Thus, *Low* in view of *Arora* in further view of *Freeny* and *Casey* teaches wherein the user input is a swipe that causes the affordance to be slid (e.g., “button” of *Low* or *Low*’s teaching that any suitable user action is acceptable, and a user input swiping a graphical user interface element that slides is just one example of an acceptable input that was well known in the art at the time of the ’772 Patent, as demonstrated by *Casey*).

**X. CONCLUSION**

This declaration and my opinions herein are made to the best of my knowledge and understanding, and based on the material available to me, at the time of signing this declaration. I declare that all statements made herein on my own knowledge are true and that all statements made on information and belief are believed to be true, and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 or Title 18 of the United States Code.

By:   
Dr. B. Clifford Neuman

Date: 2/2/2025